

BUILDING CODE: INTERNATIONAL BUILDING CODE, 2012
1. OCCUPANCY CATEGORY: IV

2. WIND DESIGN DATA:
 a. BASIC WIND SPEED @ SECOND GROUND - $V = 120$ MPH
 b. WIND IMPORTANCE FACTOR, $I_w = 1.00$
 c. WIND EXPOSURE CATEGORY - C
 d. COMPONENTS AND CLADDING LESS THAN 700 SQ FT:
 DESIGN BY REGISTERED DESIGN PROFESSIONAL IN
 ACCORDANCE WITH ASCE 7-10 FIGURE 26.5-1
3. SEISMIC DESIGN DATA:
 A. MAPPED SPECTRAL RESPONSE ACCELERATIONS:
 $S_s = 0.174$
 $S_1 = 0.058$
 B. IMPORTANCE FACTOR, $I_e = 1.5$
 C. SITE CLASS - D
 D. SPECTRAL RESPONSE COEFFICIENTS:
 $S_{ds} = 0.186$
 $S_{d1} = 0.052$
 E. SEISMIC DESIGN CATEGORY - C
- SURMIT LOADS
 FOR REPAIR
 USE $K_d = 0.85$ MIN
 AND $K_{zt} = 1.0$ MIN

1. THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE DRAWINGS OF ALL OTHER DISCIPLINES AND SPECIFICATIONS. THE CONTRACTOR SHALL VERIFY THE REQUIREMENTS OF OTHER TRADES AS TO SLEEVES, CHASES, HANGERS, INSERT ANCHORS, HOLES, AND OTHER ITEMS TO BE PLACED OR SET IN THE STRUCTURAL WORK.
2. THE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR COMPLYING WITH ALL SAFETY PRECAUTIONS AND REGULATIONS DURING THE WORK. THE ENGINEER WILL NOT ADVISE ON, NOR ISSUE DIRECTION, AS TO SAFETY PRECAUTIONS AND PROGRAMS.
3. THE STRUCTURAL DRAWINGS HEREIN REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY GUYING AND BRACING REQUIRED TO ERECT AND HOLD THE STRUCTURE IN PROPER ALIGNMENT UNTIL THE STRUCTURAL WORK AND CONNECTIONS HAVE BEEN COMPLETED. THE RESEARCH, DESIGN, SAFETY, ADEQUACY, AND INSPECTION OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC. IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
4. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE METHODS, TECHNIQUES, AND SEQUENCES OF PROCEDURES TO PERFORM THE WORK. THE SUPERVISION OF THE WORK IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
5. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY SHOWN, SIMILAR DETAILING AND CONSTRUCTION SHALL BE USED, SUBJECT TO APPROVAL BY THE STRUCTURAL ENGINEER.
6. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS RELATIVE TO ARCHITECTURAL DRAWINGS PRIOR TO BEGINNING OF CONSTRUCTION. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH WORK.
7. ALL STRUCTURAL SYSTEMS, WHICH ARE TO BE COMPRISED OF COMPONENTS TO BE FIELD ERECTED, SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURE, DELIVERY, HANDLING, STORAGE, AND ERECTION IN ACCORDANCE WITH THE SUPPLIER'S INSTRUCTIONS AND REQUIREMENTS.
8. LOADING APPLIED TO THE STRUCTURE DURING THE PROCESS OF CONSTRUCTION SHALL NOT EXCEED THE SAFE LOAD-CARRYING CAPACITY OF THE STRUCTURAL MEMBERS. THE LIVE LOADING VALUES USED IN THE DESIGN OF THIS STRUCTURE ARE INDICATED IN THE "DESIGN CRITERIA NOTES". DO NOT APPLY ANY ERECTION OR CONSTRUCTION LOADS UNTIL THE LOCAL FRAMING MEMBERS ARE COMPLETELY DESIGNED AND THE BRACING IS IN PLACE.
9. TEMPORARY OR PERMANENT SYSTEMS OR FRAMING MEMBERS THAT ARE NOT SPECIFICALLY DESIGNED, DETAILED, OR SPECIFIED IN THE CONTRACT DOCUMENTS BUT ARE REQUIRED TO COMPLETE THE FINISHED STRUCTURE, SHALL BE DESIGNED AND DETAILED BY OR UNDER THE COMMONWEALTH IN WHICH THE PROJECT IS LOCATED. ALL REQUESTED SUBMITTALS FOR THESE SYSTEMS OR FRAMING MEMBERS SHALL BE DESIGNED AND SEALED BY SAID QUALIFIED PROFESSIONAL ENGINEER. SEE SECTION 13 ON S-502 FOR ADDITIONAL INFORMATION.
10. ALL ASTM AND OTHER REFERENCES ARE PER THE LATEST EDITIONS OF THOSE STANDARDS, UNLESS NOTED OTHERWISE.
11. SEE SECTION 13 ON S-502Z FOR LIST OF MINIMUM REQUIRED SHOP DRAWING SUBMITTALS.
12. CONTRACTORS SHALL VISIT THE SITE PRIOR TO BID TO ASCERTAIN CONDITIONS WHICH MAY ADVERSELY AFFECT THE WORK OR COST THEREOF.
13. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, AND CONDITIONS WITH PREVIOUS CONSTRUCTION, EXISTING SERVICES, AND THE SITE BEFORE BEGINNING WORK. THE CONTRACTOR'S STARTING WORK WITHOUT NOTIFYING THE OWNER OF ANY DISCREPANCIES, OMISSIONS, OR OMISSIONS TO EXISTING CONDITIONS THAT EFFECT HIS WORK CONSTITUTE HIS ACCEPTANCE OF THAT WORK.
14. ALL SIGNED AND SEALED SHOP DRAWINGS AND/OR CALCULATIONS THAT ARE REQUIRED TO BE SUBMITTED FOR REVIEW SHALL BE DONE BY OR UNDER THE DIRECTION OF A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OR COMMONWEALTH IN WHICH THE PROJECT IS LOCATED.
15. FOR ITEMS TO BE SUBMITTED AS DEFERRED SUBMITTALS, SEE SECTION 13 ON S-502Z.

1. BEFORE PROCEEDING WITH ANY WORK WITHIN THE EXISTING FACILITY, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH EXISTING STRUCTURAL AND OTHER CONDITIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL NECESSARY BRACING AND OTHER SAFEGUARDS TO MAINTAIN ALL PARTS OF THE EXISTING WORK IN A SAFE CONDITION DURING THE PROCESS OF DEMOLITION AND CONSTRUCTION AND TO PROTECT FROM DAMAGE THOSE PORTIONS OF THE EXISTING WORK WHICH ARE TO REMAIN.
2. THE CONTRACTOR SHALL FIELD VERIFY THE DIMENSIONS, ELEVATIONS, ETC. NECESSARY FOR THE PROPER CONSTRUCTION AND ALIGNMENT OF THE NEW PORTIONS OF THE WORK TO THE EXISTING WORK. THE CONTRACTOR SHALL MAKE ALL NECESSARY ADJUSTMENTS TO THE DIMENSIONS AND ELEVATIONS OF STRUCTURAL MEMBERS. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER.
3. WELDING TO AND WITHIN THE EXISTING FACILITY PRESENTS POTENTIAL HAZARDS, INCLUDING:
 - A. FIRE HAZARD - DUE TO THE EXISTING CONSTRUCTION AND BUILDING CONTENTS.
 - B. STRUCTURAL LIQUEFACTION - DUE TO WELDING ACROSS THE FULL SECTION OF EXISTING STRUCTURAL MEMBERS.
4. RECOMMENDATIONS TO PREVENT THESE HAZARDS INCLUDE:
 - A. FIRE HAZARD - PROTECT EXISTING COMBUSTIBLES PRIOR TO WELDING. KEEP A SEPARATE WATCHMAN AND SEVERAL FIRE EXTINGUISHERS ON HAND.
 - B. STRUCTURAL LIQUEFACTION - WELD IN SMALL INCREMENTS. ALLOW WELDS TO HARDEN BEFORE CONTINUING TO THE NEXT INCREMENT.
 - C. DO NOT LEAVE THE SITE UNTIL SATISFIED NO FIRE HAZARD EXISTS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND ERECTION OF ALL SHORING NECESSARY TO SAFEGUARD THE EXISTING STRUCTURE. THE SHORING SHOWN IS A PARTIAL AND SCHEMATIC REPRESENTATION OF THAT REQUIRED. THE CONTRACTOR SHALL SUBMIT A DETAILED PLAN FOR SHORING, BRACING AND PROTECTION OF EXISTING CONSTRUCTION. THE PLAN SHALL INCLUDE A CONSTRUCTION SEQUENCE, BEAR THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF ARIZONA AND BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO BEGINNING THE WORK.

1. VISUAL OBSERVATION OF THE STRUCTURAL SYSTEM SHALL BE PROVIDED BY THE REGISTERED DESIGN PROFESSIONAL IN A WRITABLE CHARGE FOR THE WORKING DRAWINGS. THE CONSTRUCTION DOCUMENTS SHALL BE KEPT AT THE CONSTRUCTION STATION AND AT ALL POINTS OF THE STRUCTURAL SYSTEM. STRUCTURAL OBSERVATION SHALL INCLUDE, OR WAIVE THE RESPONSIBILITY FOR THE INSPECTION REQUIRED BY CHAPTER 17 OF THE 2012 INTERNATIONAL BUILDING CODE.
2. STRUCTURAL OBSERVATION SHALL BE PROVIDED BY THE STRUCTURAL ENGINEER OF RECORD AT THE FOLLOWING PHASES AS A MINIMUM:
 - A. UPON COMPLETION OF FOUNDATION REINFORCEMENT, IMMEDIATELY PRIOR TO CONCRETE POUR.
 - B. PERIODIC AND GENERAL GENERAL CONSTRUCTION OBSERVATION DURING PLACEMENT FOUNDATIONS.
3. FOR ALL ITEMS, THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER 72 HOURS PRIOR TO THE BEGINNING, OR COMPLETION, OF THE WORK TO BE OBSERVED.

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE HIRING OF THE INSPECTION AGENCY TO PERFORM ALL REQUIRED SPECIAL INSPECTIONS AND TESTS. PRIOR TO FINAL SELECTION OF THE INSPECTION AGENCY, THE CONTRACTOR TO SUBMIT QUALIFICATIONS TO THE SAVANHS AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE FOR APPROVAL.
2. FOR REQUIREMENTS OF THE SPECIAL INSPECTION AGENCY, REFER TO SPECIFICATION SECTION 01 45.33.
3. SPECIAL STRUCTURAL INSPECTIONS SHALL BE CONDUCTED AND DOCUMENTED AS PER CHAPTER 17 OF THE 2012 IBC AND ALL APPLICABLE AMENDMENTS FOR THE FOLLOWING ITEMS OR AS REQUIRED BY THE BUILDING OFFICIAL:
 - A. SITE SOIL CONDITIONS
 - B. CONCRETE CONSTRUCTION
 - C. MASONRY CONSTRUCTION
 - D. ANCHOR BOLTS IN PRE-DRILLED HOLES IN CONCRETE OR IN MASONRY
 - E. STEEL CONSTRUCTION
 - F. ADHESIVE ANCHORAGE
4. ALL SPECIAL INSPECTIONS SHALL BE CONDUCTED BY A QUALIFIED SPECIAL INSPECTOR AS DETERMINED BY THE 2012 IBC AND PERFORMED UNDER THE SUPERVISION OF THE ENGINEER OF RECORD.
5. SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE SAVANHS, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO THE COMPLETION OF THAT PHASE OF WORK. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS, AND CORRECTION OF ANY DISCREPANCIES NOTED DURING INSPECTIONS, SHALL BE SUBMITTED AT A POINT IN TIME AGREED UPON BY THE PERMIT APPLICANT AND THE BUILDING OFFICIAL PRIOR TO THE START OF WORK. (SECTION 1704.24, 2012 IBC)

1. THE CONTRACTOR SHALL BE FAMILIAR WITH THE SITE SURVEY AND GEOTECHNICAL REPORT BEFORE BEGINNING CONSTRUCTION.
2. NO SOILS REPORT PROVIDED. BEARING PRESSURE USED IS THE ALLOWABLE OF 1,500 PSF PER THE 2012 IBC.
3. ALL FOOTINGS SHALL BEAR ON UNDISTURBED, FIRM NATURAL SOIL OR COMPACTED FILL 2'-2" MINIMUM BELOW FINISHED GRADE CAPABLE OF SUPPORTING A DESIGN BEARING PRESSURE OF 1,500 PSF. FINISHED GRADE IS DEFINED AS TOP OF SLAB FOR INTERIOR FOOTINGS AND LOWEST ADJACENT GRADE WITHIN 5 FEET FOR PERIMETER FOOTINGS.
4. NOTIFY OWNER AS SOON AS POSSIBLE OF ANY UNUSUAL SOIL CONDITIONS OR SOIL CONDITIONS AT VARIANCE WITH THE GEOTECHNICAL REPORT.
5. ALL FOUNDATION EXCAVATIONS SHALL BE EVALUATED BY THE GEOTECHNICAL ENGINEER / TESTING AGENCY PRIOR TO POURING FOUNDATION CONCRETE. ALL FOUNDATIONS SHALL BE SET ON FIRM UNDISTURBED MATERIAL OF DESIGN BEARING CAPACITY. WHICHEVER IS LOWER. THE GEOTECHNICAL ENGINEER/TESTING AGENCY SHALL VERIFY THAT EACH FOOTING IS BEARING ON UNDISTURBED MATERIAL OF BEARING CAPACITY.
6. WHERE FOOTINGS ARE IN CLOSE PROXIMITY OF SEWERS, DRAINS, CONDUTS, PIPES, ETC., THE BOTTOM OF FOOTING SHALL BE SET AT OR BELOW THE INVERT ELEVATION OF THE ADJACENT ELEMENT.
7. TOP OF FOOTING ELEVATION SHALL AS BE SHOWN ON THE FOUNDATION PLAN. THESE ELEVATIONS ARE A MAXIMUM AND SHALL BE LOWERED AS REQUIRED TO OBTAIN THE REQUIRED DESIGN BEARING PRESSURE.
8. IF REQUIRED, STEP FOOTINGS AT A RATIO OF ONE (1) VERTICAL TO TWO (2) HORIZONTAL. THE MAXIMUM VERTICAL STEP SHALL BE 2'-0", UNLESS NOTED OTHERWISE.
9. ALL FOUNDATION CONCRETE SHALL OBTAIN A 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI. ALL CONCRETE TO BE PERMANENTLY EXPOSED TO WEATHER SHALL BE AIR ENTRAINED TO 5% (± 1%) WITH AN ADMIXTURE THAT CONFORMS TO ASTM C - 350.
10. PRIOR TO COMMENCING ANY FOUNDATION WORK, COORDINATE WORK WITH ANY EXISTING UTILITIES. FOUNDATIONS SHALL BE LOWERED WHERE REQUIRED TO AVOID UTILITIES UNLESS NOTED OTHERWISE.
11. UNLESS NOTED OTHERWISE, THE CENTERLINES OF COLUMN FOUNDATIONS SHALL BE LOCATED ON COLUMN CENTERLINES.
12. REINFORCING DETAIL DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE WORK MAY PROCEED.
13. THE FOUNDATION CONTRACTOR SHALL PREPARE DRAWINGS SHOWING ANY NECESSARY UNDERPINNING, BRACING, AND / OR SHORING OR OTHER CONSTRUCTION REQUIRED FOR THE SUPPORT OF ADJACENT PERMANENT STRUCTURES, AND BUILDINGS. NO WORK SHALL BEGIN UNTIL SUCH DRAWINGS HAVE BEEN SUBMITTED TO THE ENGINEER AND REVIEWED.
14. THE CONTRACTOR SHALL VERIFY DIMENSIONS AND LOCATIONS OF OPENINGS, PIPE SLEEVES, ANCHOR BOLTS, ETC. AS REQUIRED BY ALL TRADES BEFORE CONCRETE IS POURED.
15. BACKFILLING UNDER SLABS-ON-GRADE SHALL BE DONE WITH STRUCTURAL FILLS IN ACCORDANCE WITH THE SPECIFICATIONS AND THE GEOTECHNICAL REPORT.

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND FINAL CLEARANCES OF ANY TEMPORARY NEEDLING, UNDERPINNING, SHORING, OR BRACING OF EXISTING ADJACENT STRUCTURE, UTILITIES, OR EXCAVATIONS. DETAILS AND CALCULATIONS SHALL BE SUBMITTED FOR REVIEW.
2. ALL WORK SHALL BE EXECUTED AND INSPECTED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL CODES, RULES, ORDINANCES AND REGULATIONS PERTAINING TO SITE EXCAVATIONS, FILL AND FOUNDATION PLACING ACTIVITIES.
3. ALL EXCAVATED MATERIALS THAT ARE NOT REUSABLE SHALL BE REMOVED FROM THE SITE PROPERLY AND LEGALLY DISPOSED AT AN OFF SITE LOCATION. REFERENCE SPECIFICATIONS FOR REQUIREMENTS RELATED TO THE IDENTIFICATION OF HAZARDOUS MATERIAL IN EXCAVATIONS AND REUSE OF EXCAVATED MATERIAL FOR BACKFILL.
4. BACKFILLING AGAINST FOUNDATION OR PIT WALLS WILL NOT BE PERMITTED UNTIL THE SUPPORTING FLOORS OR WALLS ARE IN PLACE AND ABLE TO RESIST THE IMPOSED FORCES. PROPER TEMPORARY BRACING MAY BE USED IN LIEU THERE OF WITH PROPER APPROVAL OF THE STRUCTURAL ENGINEER. THE DESIGN OF THE TEMPORARY BRACING IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
5. THE BACKFILL OR FILL MATERIAL SHALL HAVE AN OPTIMUM MOISTURE CONTENT OF $\pm 2\%$ WHEN PLACED AND COMPACTED. THE FOLLOWING SHALL BE FOLLOWED:
 - A. TESTING SHALL COMPLY WITH THE PROCEDURES OF ASTM D698.
 - B. ALL MINIMUM COMPACTION REQUIREMENTS PER THE GEOTECHNICAL REPORT;
 - C. COMPACTION TESTS SHALL BE CONDUCTED ON THE SUBGRADE AND FOR EACH LAYER OF BACKFILL AT THE RATE OF ONE TEST FOR EVERY 2500 S.F. OR ONCE PER DAY PER LIFT.

1. ALL CONCRETE WORK ON THIS PROJECT SHALL COMPLY WITH THE LATEST EDITION OF THE "STANDARD SPECIFICATION FOR STRUCTURAL CONCRETE IN BUILDINGS", ACI 301, AND THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318.
2. CONCRETE MIXES SHALL BE DESIGNED PER ACI 301, USING PORTLAND CEMENT CONFORMING TO ASTM C-150, AGGREGATE CONFORMING TO ASTM C-33, ASTM C330 FOR LIGHTWEIGHT AGGREGATE, AND ADMIXTURES CONFORMING TO ASTM C-260, C-494, C-619, C-688 AND C-1017 (LISTING IS NOT ALL INCLUSIVE). CONCRETE SHALL BE READY - MIXED IN ACCORDANCE WITH ASTM C-94. SEE SPECIFICATIONS FOR CONFORMANCE REQUIREMENTS.
3. CONCRETE SHALL CONFORM TO THE FOLLOWING COMPRESSIVE STRENGTH, SLUMP AND MAXIMUM WATER/CEMENT RATIO REQUIREMENTS:

A. FOUNDATIONS	4000 PSI
B. SLAB ON GRADE	4900 PSI
- FOR SLUMP AND MAXIMUM WATER/CEMENT RATIO SEE TABLES IN CAST-IN-PLACE CONCRETE SPECIFICATION.
4. FOR SLAB ON GRADE, MAXIMUM SLUMP IS 4".
5. FOR AIR ENTRAINED CONCRETE - MAXIMUM W/C RATIO = .44
6. HOT AND / OR COLD WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 305 AND ACI 306, RESPECTIVELY .
7. ALL CONCRETE EXPOSED TO THE WEATHER OR IN A LOCATION VULNERABLE TO DEICERS SHALL CONTAIN AN AIR-ENTRAINING ADMIXTURE CONFORMING TO ASTM C260. SEE TABLES IN CAST-IN-PLACE CONCRETE SPECIFICATION FOR AMOUNT OF ENTRAINED AIR.

A. FOR FLATTED SLABS, THE AMOUNT OF ENTRAINED AIR SHALL NOT EXCEED 3%.
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ALL REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60, WELDING OF REINFORCING BARS IS PROHIBITED WITHOUT PRIOR WRITTEN APPROVAL. IF WELDING OF REINFORCING IS NECESSARY, IT SHALL BE PERFORMED IN ACCORDANCE WITH AWS D1.4. REINFORCING STEEL FOR WELDED ASSEMBLIES SHALL CONFORM TO ASTM A-706 SPECIFICATIONS.

9. ALL WELDED WIRE REINFORCEMENT (WWR) SHALL CONFORM TO ASTM A-185 (SMOOTH STEEL WIRE) AND / OR ASTM A-497 (DEFORMED STEEL WIRE). ONLY FLAT SHEETS SHALL BE USED.

10. ALTERNATIVE REINFORCING STIRRUP CONSTRUCTION:
IN LIEU OF ASTM A-615, GRADE 60 REINFORCING BARS, THE CONTRACTOR MAY SUBMIT FOR APPROVAL GRADE 75 HIGH YIELD WWR THAT IS CERTIFIED TO ASTM A-496 AND A-497 WHILE MEETING ACI 318 CODE REQUIREMENTS OF DEFORMED REINFORCEMENT TESTING.

11. ALL REINFORCING STEEL SHALL BE SET AND TIED IN PLACE PRIOR TO POURING OF CONCRETE. DO NOT FIELD BEND BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE UNLESS SPECIFICALLY INDICATED OR APPROVED BY THE STRUCTURAL ENGINEER IN WRITING.

12. REINFORCING STEEL, INCLUDING HOOKS AND BENDS SHALL BE DETAILED IN ACCORDANCE WITH ACI 315.

13. ALL REINFORCING STEEL INDICATED AS BEING CONTINUOUS (CONT.) ON THE PLANS AND DETAILS SHALL BE LAPPED WITH A CLASS B SPlice OR 36 x BAR DIAMETER (WHICHEVER IS GREATER) UNLESS NOTED OTHERWISE.

14. CONCRETE SHALL BE DISCHARGED AT THE SITE WITHIN 1-1/2 HOURS AFTER WATER HAS BEEN ADDED TO THE CEMENT AND AGGREGATE. ADDITION OF WATER TO THE MIX AT THE PROJECT SITE WILL NOT BE ALLOWED. ALL WATER MUST BE ADDED AT THE BATCH PLANT ONLY.

15. PROVIDE CORROSION RESISTANT ACCESSORIES SUCH AS PLASTIC COATED (NOT PLASTIC TIPPED) OR STAINLESS STEEL CHAIRS IN ALL EXPOSED CONCRETE CONSTRUCTION. PRECAST CONCRETE CHAIRS OR SAND PLATE CHAIRS SHALL BE USED FOR THE SUPPORT OF REINFORCING ON GRADE. CONCRETE BLOCK OR CLAY MASONRY BRICK ARE NOT PERMITTED.

16. REINFORCING BARS REQUIRED FOR PROPER SUPPORT OF PRINCIPAL REINFORCING SHALL BE DETAILED AND SUPPLIED BY THE CONTRACTOR WHETHER OR NOT THEY ARE INDICATED ON THE DESIGN DRAWINGS. THE MINIMUM BAR SIZE SHALL BE # 4 AND THE MAXIMUM SPACING SHALL BE 36" ON CENTER FOR ALL BARS THAT NEED SUPPORT. WELDED WIRE FABRIC SHALL NOT BE USED TO SUPPORT THE PRINCIPAL REINFORCING.

17. PROVIDE 6 x 6 - W2.0 x W2.0 WWR (FLAT SHEETS ONLY) IN ALL TOPPING SLABS, CONCRETE FILLS, STAIR PLATFORMS AND LANDINGS, UNLESS NOTED OTHERWISE.

18. ALL WWR SHALL BE CHAINED TO ITS PROPER HEIGHT AND MAINTAINED AT THE PROPER LEVEL THROUGHOUT THE CONCRETE PLACING OPERATION. LIFTING OF WWR WITH A HOOK DURING CONCRETE PLACEMENT SHALL NOT BE PERMITTED.

19. VERIFY WITH THE ARCHITECTURAL DRAWINGS ALL TOP OF SLAB, TOPPING SLABS AND SLAB-ON-GRADE ELEVATIONS COMPLY WITH THE ARCHITECTURAL DRAWINGS FOR LOCATION AND EXTENT OF SPECIAL FINISHES OR TREATMENTS TO EXPOSED CONCRETE.

20. UNLESS NOTED OTHERWISE, THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:

A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	- 3"
B. FORMED CONCRETE EXPOSED TO EARTH OR WEATHER:	- 2"
1. #6 THROUGH #18 BARS	- 3"
2. #5 BAR, W31 OR D31 WIRE & SMALLER	- 1 1/2"
C. CONCRETE NOT EXPOSED TO EARTH OR WEATHER:	
1. SLABS:	
i. #14 & #18 BARS	- 1 1/2"
ii. #11 BAR & SMALLER	- 3/4"
2. WALLS:	
i. INTERIOR FACE	- 3/4"
ii. EXTERIOR FACE, #5 BAR AND SMALLER	- 1 1/2"
iii. EXTERIOR FACE, #6 BAR AND LARGER	- 2"
3. SLABS ON METAL DECK (WWR)	- 1"

21. BAR SUPPORTS AND HOLDING BARS SHALL BE PROVIDED FOR ALL REINFORCING STEEL TO INSURE MINIMUM CONCRETE COVER. BAR SUPPORTS SHALL BE PLASTIC COATED (NOT PLASTIC TIPPED) OR STAINLESS STEEL.

22. OPENINGS SHALL NOT BE PLACED IN FRAMED SLABS, BEAMS, JOISTS, GIRDERS, COLUMNS, OR WALLS UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED IN WRITING PRIOR TO PLACING CONCRETE. CUTTING HOLES THROUGH BEAMS, JOISTS OR COLUMNS SHALL NOT BE PERMITTED. CUTTING HOLES LARGER THAN 10" ROUND OR 8-1/2" SQUARE THROUGH SLABS, JOISTS NOT BE PERMITTED.

23. CONTRACTOR TO PREPARE CONSTRUCTION JOINT PLAN. CONSTRUCTION JOINTS SHALL BE SUBJECT TO REVIEW BY THE C.O.R. AND THE REGISTERED DESIGN PROFESSIONAL. IN RESPONSIBLE CHARGE, AND SHALL BE DETAILED AS SPECIFIED ON THE DRAWINGS OR AS NOTED, CONTINUE ALL REINFORCING THROUGH THE JOINTS

A. FRAMED SLABS AND WALLS - LOCATE AT MIDSPAN. PROVIDE ONE CONTINUOUS HORIZONTAL SHEAR KEY 1-1/2" DEEP; 1/3 THE DEPTH OF THE SLAB OR WALL, IF THE WALL IS AN EXTERIOR WALL, WATERSTOPS MUST BE LOCATED AT THE JOINT.	
B. SLABS ON STEEL DECK SUPPORTED BY STEEL BEAMS (EXCLUDING COMPOSITE DECK) - LOCATE JOINTS AT MIDSPAN OF DECK AND MIDSPAN OF BEAMS. NO 1/4" IS REQUIRED.	

24. FOR POURING OF ELEVATED SLABS, PLACE CONCRETE FIRST OVER BEAMS AND GIRDERS RATHER THAN AT MID-SPAN. DO NOT PILE IT HIGHER THAN THE FINISHED DEPTH OF THE SLAB.

25. IN ORDER TO AVOID CONCRETE SHRINKAGE CRACKING, PLACE CONCRETE SLABS IN LONG ALTERNATING STRIPS WITH CONSTRUCTION JOINTS INSTALLED TRANSVERSE TO THE LENGTH OF THE STRIP.

26. PROVIDE CONSTRUCTION JOINTS IN ALL SLAB-ON-GRADE. THE MAXIMUM SPACING OF CONSTRUCTION JOINTS SHALL BE 15'-0" O.C., UNLESS NOTED OTHERWISE. CONTRACTOR TO SUBMIT JOINT LAYOUT AND PLACING SEQUENCE FOR REVIEW.

27. PROVIDE CONSTRUCTION JOINTS IN ACCORDANCE WITH ACI 318, SECTION 6.4. SUBMIT DRAWINGS SHOWING SEQUENCE AND DIRECTION OF POUR TO PERMIT SLAB SHRINKAGE FOR EXPANSION REVIEW. PROVIDE KEYS AND ADEQUATE DOWELS AT ALL CONSTRUCTION JOINTS

28. REINFORCING BAR LAP SPICES AND TENSION DEVELOPMENT LENGTHS SHALL CONFORM TO TABLE #10 ON THIS SHEET.

29. ALL HORIZONTAL WALL AND BEAM REINFORCING SHALL BEND AROUND ALL CORNERS AND LAPPED SO AS TO CONFORM TO TABLE #11 SHOWN ON THIS SHEET, UNLESS NOTED OTHERWISE.

30. PROVIDE PIPE SLEEVES AND INSERTS IN CONCRETE WHERE REQUIRED. COORDINATE THESE ITEMS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.

31. DETERMINE SIZE AND LOCATION OF MECHANICAL EQUIPMENT, AND MAKE PROVISIONS FOR BOLTS, SLEEVES, PADS, ETC. IN ACCORDANCE WITH THE MANUFACTURER'S CERTIFIED DRAWINGS. THIS WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED.

32. ALL EDGES OF PERMANENTLY EXPOSED CONCRETE SURFACES SHALL BE CHAMFERED 3/4", UNLESS NOTED OTHERWISE.

33. THE CONTRACTOR SHALL PROVIDE THE STRUCTURAL ENGINEER WITH DOCUMENTATION THAT ALL MATERIALS CONFORM TO THE QUALITY STANDARDS NOTED HEREIN.

34. THE CONTRACTOR SHALL ALLOW IN THE BID AN ADDITIONAL ONE (1) TON OR 1% OF THE TOTAL TONNAGE (WHICHEVER IS GREATER) OF REINFORCING STEEL TO BE PLACED IN THE FIELD AT THE DIRECTION OF THE ENGINEER, ANY UNUSED PORTION OF THIS ALLOWANCE SHALL BE CREDITED TO THE SAVINGS.

35. ALL CONCRETE WORK SHALL BE INSPECTED. THE CONTRACTOR WILL HIRE THE INSPECTION AGENCY TO PERFORM ALL REQUIRED INSPECTIONS AND TESTS, PRIOR TO HIRING THE INSPECTION AGENCY, THE CONTRACTOR TO SUBMIT QUALIFICATIONS OF THE PROPOSED TESTING AGENCIES TO THE SAVANHS AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE FOR APPROVAL.

TABLE #1					
MINIMUM LAP SPlice AND ANCHORAGE DIMENSION TABLE FOR 4000 PSI CONCRETE					
ASTM A 615 GRADE 60 REINFORCING					
TOP BARS		OTHER BARS			
BAR SIZE	LAP	ANCHORAGE	BAR SIZE	LAP	ANCHORAGE
# 3	24"	19"	# 3	19"	15"
# 4	33"	25"	# 4	25"	19"
# 5	41"	31"	# 5	31"	24"
# 6	49"	37"	# 6	37"	29"
# 7	71"	54"	# 7	54"	42"
# 8	81"	62"	# 8	62"	48"
# 9	91"	70"	# 9	70"	54"
# 10	101"	78"	# 10	78"	60"
# 11	111"	85"	# 11	85"	66"
# 14	M.S.	108"	# 14	M.S.	83"
# 16	M.S.	138"	# 16	M.S.	107"

1. ALL STRUCTURAL STEEL SHALL CONFORM TO THE 14TH EDITION OF THE "STEEL CONSTRUCTION MANUAL" OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), D1.1 "STRUCTURAL WELDING CODE" OF THE AMERICAN WELDING SOCIETY (AWS), AND THE CONTRACT DOCUMENTS.

2. THE LOCATION, SIZE AND CONDITION OF EXISTING STRUCTURES, EQUIPMENT, UTILITIES, SERVICES AND OTHER RELEVANT ENGINEERING FEATURES SHALL BE VERIFIED PRIOR TO FABRICATION OR ERECTION.

3. THE CONTRACTOR IS RESPONSIBLE FOR THE DETERMINATION OF CLEARANCES, DIMENSIONS AND FABRICATION OR ERECTION PROCEDURES, ADEQUATE BRACING AND TEMPORARY SUPPORTS FOR THE STABILITY OF ALL EXISTING ITEMS.

4. WORK STRUCTURAL STEEL DRAWINGS WITH ARCHITECTURAL, HVAC, PLUMBING, FIRE PROTECTION, AND ELECTRICAL DRAWINGS FOR CLEARANCES, ATTACHMENTS, ETC.

5. UNLESS NOTED OTHERWISE, ALL MATERIAL SHALL BE IN ACCORDANCE WITH THE FOLLOWING ASTM SPECIFICATIONS:

A. PRIMARY & SECONDARY STRUCTURAL STEEL MEMBERS.

1. W- SHAPES ASTM A992

2. CHANNELS ASTM A36 or ASTM A572 GR. 50

3. ANGLES ASTM A36

B. STRUCTURAL TUBING ASTM A500 GR. B

C. CONNECTION PLATES, LOOSE PLATES, BASE PLATES & SECONDARY ANGLES ASTM A36

D. ANCHOR RODS ASTM F1554, GR. 36, 55, or 105

6. FOR BOLTED STRUCTURAL STEEL CONNECTIONS, USE A325 BOLTS OR ASTM F1852, TYPE 1 TWIST-OFF TENSION CONTROL BOLTS, INSTALLED PER SECTION 8 TO A MINIMUM PRETENSION AS STATED IN TABLE 8.1 AND INSPECTED PER SECTION 9 OF THE RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, DATED DECEMBER 31, 2009. TYPICAL UNLESS NOTED OTHERWISE). BOLTS SHALL BE INSTALLED AS "SNUG TIGHT" WITH THREADS EXCLUDED FROM THE SHEAR PLANE.

7. DO NOT FINAL WELD OR BOLT/UTL MEMBERS ARE IN PROPER ALIGNMENT

8. ALL WELDING SHALL BE IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) D1.1 USING E70XX (MINIMUM) ELECTRODES UNLESS NOTED OTHERWISE. PROVIDE CONTINUOUS MINIMUM SIZE FILLET WELDS PER AISC REQUIREMENTS. ALL FILLER MATERIAL SHALL HAVE A MINIMUM YIELD STRENGTH OF 58 KSI.

9. COLUMNS AND BEAMS WITH BASE, CAP OR END PLATES SHALL HAVE SQUARE CUT OR MILLED ENDS.

10. UNLESS NOTED OTHERWISE, ALL PIPE AND TUBE COLUMNS SHALL BE SEAL WELDED WITH CLOSURE PLATES TO BE AIR TIGHT. ARCHITECTURAL PIPES AND TUBES SHALL BE PROVIDED WITH 3/8" DIAMETER WEEP HOLES.

11. STEEL SHAPES SHALL BE ERECTED STRAIGHT, CAMBER AND SWEEP MEASURED AT MID SPAN SHALL NOT EXCEED THE PERMISSIBLE VARIATION AS STATED IN THE CITED SPECIFICATION.

12. THE FRAMING SHALL BE ERECTED TRUE AND PLUMB. TEMPORARY BRACING SHALL BE PROVIDED AND SHALL REMAIN IN PLACE UNTIL THE LATERAL BRACING SYSTEM IS IN PLACE AND CONNECTIONS OF ALL MEMBERS ARE FINAL AND ALL DECK IS COMPLETELY ERECTED, WELDED AND SCREWED IN PLACE.

13. NON-METALLIC, NON-SHRINK, CHLORIDE FREE GROUT UNDER ALL COLUMN BASE PLATES AND BEAM BEARING PLATES SHALL CONSIST OF A PRE-MIXED PRODUCT COMPLYING WITH ALL REQUIREMENTS OF CRD-0261, ASTM C1109 AND ASTM C1107.

14. WHERE "CONTINUOUS CHORD" ANGLES ARE INDICATED, PROVIDE A CONTINUOUS BUTT WELD OR FULL PENETRATION WELD AT THE SPICE POINTS. THE STEEL FABRICATOR MAY SUBMIT AN ALTERNATE BOLTED CONNECTION DETAIL FOR APPROVAL.

15. HOLES IN STEEL SHALL BE DRILLED OR PUNCHED. ALL SLOTTED HOLES SHALL BE PROVIDED WITH SMOOTH EDGES. BURNING OF HOLES AND TORCH CUTTING AT THE SITE IS NOT PERMITTED.

16. THE STRUCTURAL STEEL ERECTOR SHALL PROVIDE ALL TEMPORARY GUYING AND BRACING (SEE "GENERAL STRUCTURAL NOTES").

17. COLUMNS, ANCHOR BOLTS, BASE PLATES, ETC. HAVE BEEN DESIGNED FOR THE FINAL COMPLETED CONDITION AND HAVE NOT BEEN INVESTIGATED FOR POTENTIAL LOADING ENCOUNTERED DURING STEEL ERECTION AND CONSTRUCTION. ANY INVESTIGATION OF THE COLUMNS, ANCHOR BOLTS, BASE PLATES, ETC. FOR ADEQUACY DURING THE STEEL ERECTION AND CONSTRUCTION PROCESS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

18. UNLESS NOTED OTHERWISE, ALL STRUCTURAL STEEL PERMANENTLY EXPOSED TO VIEW SHALL BE SHOP PAINTED PER THE FOLLOWING:

A. PREPARE SURFACES IN ACCORDANCE WITH SSPC.

B. APPLY PRIMER AS SPECIFIED IN THE CONTRACT SPECIFICATIONS. IF NO PRIMER IS SPECIFIED, ENSURE PRIMER CHOSEN IS COMPATIBLE WITH TOP COAT SPECIFIED.

C. ALL BARE STEEL (BOLTS AND WELDS INCLUDED) FOUND IN THE FIELD AFTER ERECTION SHALL BE PREPARED AND PAINTED AS NOTED ABOVE.

19. UNLESS NOTED OTHERWISE, THE FOLLOWING ITEMS SHALL NOT BE PAINTED:

A. SURFACES OF CONNECTIONS INDICATED AS SLIP CRITICAL.

B. SURFACES OF CONNECTIONS TO BE FIELD WELDED.

F. SURFACES TO RECEIVE HEADED SHEAR CONNECTORS.

G. MEMBERS TO BE EMBEDDED IN CONCRETE OR MASONRY.

H. SURFACES TO RECEIVE SPRAYED OR INSULATION OR FIRE PROTECTION.

I. MEMBERS TO BE GALVANIZED.

21. UNLESS NOTED OTHERWISE, ALL STRUCTURAL STEEL PERMANENTLY EXPOSED TO THE WEATHER, INCLUDING ALL BRICK SHELF ANGLES, SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123. ALL DAMAGED GALVANIZING SHALL BE REPAIRED IN ACCORDANCE WITH ASTM A780.

22. PROTECTIVE COATINGS DAMAGED DURING THE TRANSPORTING, ERECTING AND FIELD WELDING PROCESSES SHALL BE REPAIRED IN THE FIELD TO MATCH THE SHOP APPLIED COATING.

23. THE SAVANCHS & CONTRACTOR WILL HIRE AN INDEPENDENT TESTING AGENCY TO PROVIDE SPECIAL INSPECTIONS OF BOLTING, WELDING AND OTHER ITEMS.

24. STEEL FABRICATORS SHALL BE AN AISC CERTIFIED SHOP FOR CATEGORY I STEEL STRUCTURES AND MAINTAIN DETAILED QUALITY CONTROL PROCEDURES.

25. ALL MODIFICATIONS REQUIRED FOR OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWINGS, AND MADE DURING SHOP FABRICATION. FIELD BURNING OF STRUCTURAL STEEL IS PROHIBITED.



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11. MASONRY

1. MASONRY CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE 'SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530.1/ASCE 6/TMS 602)' AND 'BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 308/ASCE 5/TMS 402)' PUBLISHED BY THE AMERICAN CONCRETE INSTITUTE.

2. HOLLOW LOAD - BEARING MASONRY UNITS SHALL CONFORM TO ASTM C90. THE MINIMUM DESIGN COMPRESSIVE STRENGTH (fm) SHALL BE 1,500 PSI, AS DETERMINED BY THE UNIT STRENGTH METHOD OF ACI 530.1-11. THE UNITS SHALL BE MANUFACTURED SO THE CORES AND WEBS LINE UP WHEN LAID IN A RUNNING BOND.

A. UNITS SHALL BE NORMAL WEIGHT UNITS WITH A DRY UNIT WEIGHT OF NOT MORE THAN 135 PCF.

B. UNITS SHALL BE MANUFACTURER'S STANDARD UNITS WITH NOMINAL FACE DIMENSIONS OF 16" LONG x 8" HIGH (15 5/8"x7 5/8" ACTUAL), UNLESS NOTED OTHERWISE.

C. PROVIDE SPECIAL SHAPES WHERE SHOWN AND WHERE REQUIRED FOR LINTELS, CORNERS, JAMBS, SASH, CONTROL JOINTS, HEADERS, BOND BEAMS, AND ANY OTHER SPECIAL CONDITIONS SHOWN ON THE ARCHITECTURAL DRAWINGS.

3. FILL ALL BOND BEAMS AND REINFORCED CELLS SOLIDLY WITH GROUT. GROUT SHALL CONFORM TO ASTM C476 AND SHALL OBTAIN A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2,500 PSI.

4. REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM A615, GRADE 60. SHOP FABRICATE REINFORCING BARS WHICH ARE SHOWN TO BE HOOKED OR BENT. PROVIDE A MINIMUM LAP OF 48 x BAR DIAMETERS AT ALL SPLICES, UNLESS INDICATED OTHERWISE.

5. THE USE OF PREMIXED MASONRY - CEMENT MORTAR IS STRICTLY PROHIBITED.

6. MORTAR FOR ALL BEARING WALLS SHALL CONFORM TO ASTM C270, TYPE S. ALL MORTAR SHALL MEET THE 'PROPORTION SPECIFICATION' OF ASTM C270 AND BE MADE WITH PORTLAND CEMENT / LIME (NON AIR - ENTRAINED), THE MORTAR SHALL OBTAIN A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI IN 28 DAYS.

7. MORTAR FOR NON-LOADBEARING INTERIOR WALLS SHALL CONFORM TO ASTM C270, TYPE N. IT SHALL OBTAIN A MINIMUM COMPRESSIVE STRENGTH OF 750 PSI IN 28 DAYS.

8. GROUT SHALL CONFORM TO ASTM C476 COURSE GROUT, 3/8" MAXIMUM SIZE COURSE AGGREGATE, WITH A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI IN 28 DAYS.

9. UNLESS OTHERWISE INDICATED, ALL WALLS SHALL BE LAID IN RUNNING BOND. BOND CORNERS AND INTERSECTIONS OF LOAD - BEARING WALLS. ALL UNITS SHALL BE LAID WITH FULL MORTAR COVERAGE ON HEAD, BED (FACE SHELL), WEBS, AND COLLAR JOINTS, UNLESS NOTED OTHERWISE.

10. PROVIDE VERTICAL REINFORCING BARS OF THE GIVEN SIZE AND SPACING AS INDICATED. PROVIDE BARS AT ALL WALL CORNERS, INTERSECTIONS, AND OPENING EDGES.

11. PROVIDE REBAR DOWELS FROM FOUNDATIONS TO MATCH VERTICAL REINFORCING SIZE AND SPACING. DOWELS SHALL HAVE STANDARD 90 DEGREE HOOKS AND LAP WITH THE FIRST LIFT OF REINFORCING.

12. PROVIDE HORIZONTAL BOND BEAMS WITH CONTINUOUS REINFORCING AS INDICATED. DISCONTINUE ALL HORIZONTAL REINFORCING AT CONTROL JOINTS EXCEPT FOR THE BOND BEAMS AT BEARING ELEVATIONS. INTERMEDIATE BOND BEAMS SHALL BE PROVIDED AT NOMINAL 4-FOOT INCREMENTS ON CENTER.

13. PROVIDE STANDARD 9 GAUGE HORIZONTAL JOINT REINFORCING AT 16" ON CENTER IN ALL WALLS. PROVIDE TRUSS TYPE JOINT REINFORCING FOR ALL CONCRETE MASONRY. COORDINATE BRICK TIE BACK REQUIREMENTS WITH THE ARCHITECTURAL DRAWINGS. UNLESS NOTED OTHERWISE, STOP ALL HORIZONTAL JOINT REINFORCEMENT AT CONTROL JOINTS.

14. PROVIDE BOND BEAM LINTELS AND BRICK SHELF ANGLES ABOVE ALL WALL OPENINGS. SEE THE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL DOOR AND WINDOW OPENINGS.

15. PROVIDE BEAM BEARING PLATES AND OTHER ACCESSORIES AS INDICATED. PROVIDE THREE (3) COURSES OF SOLIDLY GROUTED CMU BELOW ALL BEAM BEARINGS OVER A WIDTH OF 2-4" CENTERED ON THE WALL, UNLESS NOTED OTHERWISE.

16. PROVIDE CMU CONTROL JOINTS AS INDICATED, WITH ADDITIONAL JOINTS SUCH THAT THE SPACING BETWEEN JOINTS DOES NOT EXCEED A SPACING OF 3 x WALL HEIGHT (36 FEET MAXIMUM), WHERE BEAMS OR LINTELS BEAR AT CMU CONTROL JOINTS, OFFSET & LAP THE VERTICAL REINFORCING.

17. TEMPORARILY BRACE ALL MASONRY WALLS TO PROVIDE STABILITY DURING CONSTRUCTION UNTIL THE DESIGNED STRUCTURE IS COMPLETED AND CAN STABILIZE THE WALLS.

18. PREMOLDED CONTROL JOINT STRIPS - SOLID RUBBER STRIPS WITH A SHORE "A" DUROMETER HARDNESS OF 60 TO 80, DESIGNED TO FIT STANDARD SASH BLOCK AND MAINTAIN LATERAL STABILITY IN MASONRY WALLS.

19. NO CHASES, RISERS, CONDUITS, OR TOOTHING OF MASONRY SHALL OCCUR WITHIN 17" OF CENTERLINE OF BEAM BEARING OR LOAD CONCENTRATION.

20. ALL INTERSECTING LOAD BEARING WALLS SHALL BE TIED TOGETHER IN MASONRY BOND, UNLESS NOTED OTHERWISE.

12. POST-INSTALLED ANCHORS

1. CONCRETE: ADHESIVE ANCHORS SHALL BE HILTIHY 200 (ICC-ES ESR-3187), OR APPROVED EQUAL, CONSIDERING LOAD RESISTANCE, IN-SERVICE AND INSTALLATION TEMPERATURE, AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS, AND CREEP. ADHESIVE ANCHORS SHALL BE APPROVED FOR USE WITH CRACKED CONCRETE PER AC 308. CURRENT ICC-ESR SHALL BE SUBMITTED.

2. MASONRY: ADHESIVE ANCHORS SHALL BE HILTIHY 70 (ICC-ES ESR-2652), OR APPROVED EQUAL, CONSIDERING LOAD RESISTANCE, IN-SERVICE AND INSTALLATION TEMPERATURE, AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS, AND CREEP. CURRENT ICC-ESR SHALL BE SUBMITTED.

3. MECHANICAL ANCHORS SHALL BE HILTI KWIK-HUS EZ-1 (ICC-ES ESR-3027) OR APPROVED EQUAL CONSIDERING LOAD RESISTANCE. MECHANICAL ANCHORS SHALL BE APPROVED FOR USE WITH CRACKED CONCRETE PER AC 193. CURRENT ICC-ESR SHALL BE SUBMITTED.

4. ALL PERSONNEL INSTALLING POST-INSTALLED ANCHORS SHALL BE TRAINED BY THE MANUFACTURER ON PROPER INSTALLATION TECHNIQUE. TRAINING DOCUMENTATION FROM THE MANUFACTURER SHALL BE AVAILABLE ON REQUEST.

5. SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC-ES REPORT SHOWING COMPLIANCE WITH COLEMAN BUILDING CODES FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE.

6. ALL ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND ALL APPLICABLE ICC-ES REQUIREMENTS, INCLUDING BUT NOT LIMITED TO ALL ANCHOR SPACINGS, EMBEDMENTS, AND EDGE DISTANCES.

13. SUBMITTALS & DEFERRED SUBMITTALS

1. SHOP DRAWINGS AND OTHER ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION. ALL SHOP DRAWINGS MUST BE CHECKED BY THE FABRICATOR AND BEAR THE CHECKER'S INITIALS PRIOR TO THE SUBMITTAL. THE GENERAL CONTRACTOR SHALL REVIEW AND STAMP ALL SHOP DRAWINGS AND PRODUCT DATA FOR CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS PRIOR TO SUBMITTAL. ANY SHOP DRAWINGS OR PRODUCT DATA NOT REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR WILL BE RETURNED WITHOUT REVIEW. THE CONTRACTOR SHALL CLOUD OR FLAG ALL ITEMS NOT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. ALL DIMENSIONS TO BE REVIEWED WITH THE ARCHITECT.

2. ANY CHANGES, SUBSTITUTIONS, OR DEVIATIONS FROM THE ORIGINAL CONTRACT DRAWINGS SHALL BE CLOUDED BY THE MANUFACTURER OR FABRICATOR, AND THE CONTRACTOR. ANY CHANGES, SUBSTITUTIONS, OR DEVIATIONS WHICH ARE NOT CLOUDED OR FLAGGED BY SUBMITTING PARTIES SHALL NOT BE CONSIDERED ALLOWED AFTER THE ENGINEERS REVIEW, UNLESS NOTED ACCORDINGLY BY THE STRUCTURAL ENGINEER.

3. THE ENGINEERS REVIEW IS TO VERIFY CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE PERTINENT CONTRACT DOCUMENTS. THE ENGINEERS REVIEW IS INTENDED ONLY AS AN AID TO THE CONTRACTOR IN OBTAINING CORRECT SHOP DRAWINGS. THE ENGINEER'S REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO REVIEW, CHECK, AND COORDINATE THE SHOP DRAWINGS PRIOR TO SUBMISSION. THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS, DIMENSIONS, ETC.

4. THE STRUCTURAL ENGINEER RESERVES THE RIGHT TO ALLOW OR NOT ALLOW ANY CHANGES TO THE ORIGINAL CONTRACT DRAWINGS AT ANY TIME BEFORE OR AFTER SHOP DRAWING REVIEW.

5. THE SHOP DRAWINGS DO NOT REPLACE THE ORIGINAL CONTRACT DRAWINGS. ITEMS OMITTED OR SHOWN INCORRECTLY AND WHICH ARE NOT NOTED AS ALLOWED BY THE STRUCTURAL ENGINEER, OR ARCHITECT, ARE NOT TO BE CONSIDERED CHANGES TO THE ORIGINAL CONTRACT DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ITEMS OMITTED OR SHOWN INCORRECTLY ARE CONSTRUCTED IN ACCORDANCE WITH THE ORIGINAL CONTRACT DRAWINGS.

6. IN NO CASE SHALL REPRODUCTION OF THE CONTRACT DRAWINGS BE USED AS SHOP DRAWINGS. AS A MINIMUM, SUBMIT THE FOLLOWING ITEMS FOR REVIEW:

A. CONCRETE MIX DESIGNS

B. CONTRACTION AND CONSTRUCTION JOINT LAYOUT SHOP DRAWINGS (SLAB-ON-GRADE, WALLS, & ELEVATED SLABS)

C. REINFORCING STEEL SHOP DRAWINGS

D. MASONRY SHOP DRAWINGS

E. STRUCTURAL STEEL SHOP DRAWINGS

COORDINATE ITEMS ABOVE WITH REQUIRED ADDITIONAL SUBMITTALS PER THE SUBMITTED SPECIFICATIONS AND/OR THE SEPERATE NOTES CONTAINED HEREIN.

7. DEFERRED SUBMITTALS - SUBMITTALS THAT ARE SUBMITTED DURING CONSTRUCTION AND REQUIRED BY THE STRUCUTRAL NOTES OR SPECIFICATIONS WHICH CONTAIN SEALED DESIGN CALCULATIONS AND DRAWINGS BY A REGISTERED ENGINEER OTHER THAN THE ENGINEER OF RECORD. DEFERRED SUBMITTALS SHALL BE REVIEWED BY THE ENGINEER OF RECORD AND DETERMINED TO BE IN GENERAL CONFORMANCE WITH THE BUILDING DESIGN. DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE C.O.R. AND THE STRUCTURAL ENGINEER OF RECORD. DEFERRED SUBMITTALS SHALL INCLUDE THE FOLLOWING:

A. UNDERPPINNING & SHORING (AS REQUIRED)

8. ALL ENGINEERING DESIGNS AND LAYOUTS PERFORMED BY OTHERS SHALL BE SEALED BY A CIVIL OR STRUCTURAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED.

13. ABBREVIATIONS

AFF ABOVE FINISH FLOOR

ADDL ADDITIONAL

ADJ ADJACENT

ALT ALTERNATE

AB ANCHOR BOLT

ARCH ARCHITECTURAL

ACI/AC ALASKAN CEDAR GLU-LAM BEAM

BSMT BASEMENT

B PL BASE PLATE

BLKG BLOCKING

BM BEAM

B.N. BOUNDARY NAILING

BRG BEARING

BRG PL BEARING PLATE

BTWN BETWEEN

BS BOTH SIDES

BOT BOTTOM

BOS BOTTOM OF STEEL

BRGC BRACING

BRDG BRIDGING

BRK BRICK

BLDG BUILDING

CANTIL CANTILEVER

OP CAST - IN - PLACE

CLG CEILING

CLR CLEAR

COL COLUMN

CONC CONCRETE

CMU CONCRETE MASONRY UNIT

CONT CONTINUOUS

CONTR CONTRACTOR

CJ CONTROL JOINT / CONSTRUCTION JOINT

CL CENTERLINE

DEMO DEMOLISH / DEMOLITION

DET DETAIL

DF/DI DOUGLAS FIR GLU-LAM BEAM

DIA DIAGONAL

DIA DIAMETER

DM DIMENSION

DN DOWN

DWG DRAWING

(E) EXISTING

EA EACH

EF EACH FACE

EL ELEVATION

EOD EDGE OF DECK

EOS EDGE OF SLAB

EQ EQUAL

EQL SP EQUALLY SPACED

EW EACH WAY

EXP BT EXPANSION BOLT

EJ EXPANSION JOINT

FF FAR FACE

FS FAR SIDE

FIN FINISH (ED)

FIN FL FINISH FLOOR

FLR FLOOR

FD FLOOR DRAIN

FT FOOT

FR FRAME

FTG FOOTING

FDN FOUNDATION

GALV GALVANIZED

GA GAUGE, GAGE

GC GENERAL CONTRACTOR

GLB GLUED-LAMINATED BEAM

GR BM GRADE BEAM

HDMR HARDENER

HORIZ HORIZONTAL

HSS HOLLOW STRUCTURAL SECTION

HVAC HEATING, VENTILATING & AIR CONDITIONING

ID INSIDE DIAMETER

IF INSIDE FACE

INT INTERIOR

JT JOINT

KIP (KIP) THOUSAND POUNDS

KB KNEE BRACE

KO KNOCK OUT

LF LINEAR FEET

LTL LINTEL

LL LIVE LOAD

LLH LONG LEG HORIZONTAL

LLV LONG LEG VERTICAL

LPT LOW POINT

LT WT LIGHT WEIGHT

LW LONG WAY

MFR MANUFACTURER

MAS MASONRY

MO MASONRY OPENING

MAT MATERIAL

MAX MAXIMUM

MECH MECHANICAL

MTL METAL

MIN MINIMUM

MISC MISCELLANEOUS

M MOMENT

NF NEAR FACE

NS NEAR SIDE

NOM NOMINAL

NIC NOT IN CONTRACT

NTS NOT TO SCALE

NO NUMBER

OA OVERALL

OC ON CENTER

OD OUTSIDE DIAMETER

OF OUTSIDE FACE

OPNG OPENING

OPP OPPOSITE

OPH OPPOSITE HAND

PCC PRECAST CONCRETE

PCF POUNDS PER CUBIC FOOT

PCPNL PRECAST CONCRETE PANEL

P.J. POUR JOINT

PLT PLATE

PLYWD PLYWOOD

PREFAB PREFABRICATED

PROJ PROJECTION

PS CONC PRE-STRESSED CONCRETE

PSF POUNDS PER SQUARE FOOT

PSI POUNDS PER SQUARE INCH

QTY QUANTITY

R RADIUS

REC RECESS (ED)

REF REFERENCE

REINF REINFORCE (D) (ING)

REQD REQUIRED

REV REVISION

RD ROOF DRAIN

RO ROUGH OPENING

SECT SECTION

SHTNG SHEATHING

SHT SHEET

SIMILAR SIMILAR

SPEC SPECIFICATION

SF SQUARE FOOT (FEET)

SST STAINLESS STEEL

STD STANDARD

STL STEEL

STRUCT STRUCTURAL

SYMM SYMMETRICAL

TEMP TEMPORARY / TEMPERATURE

THK THICK (NESS)

T & B TOP AND BOTTOM

TJ TIE JOIST

TO TOP OF

TOS TOP OF STEEL

TOW TOP OF WALL

TYP TYPICAL

UNO UNLESS OTHERWISE NOTED

UNO UNLESS NOTED OTHERWISE

VIF VERIFY IN FIELD

VERT VERTICAL

WPJ WEAKENED PLAN JOINT

WT WEIGHT

WWR WELDED WIRE REINFORCING

WWF WELDED WIRE FABRIC

WTH WITH

W / O WITHOUT

WD WOOD

14. SYMBOL LEGEND

X

X-X

DETAIL REFERENCE

DETAIL NUMBER

SHEET NO. WHERE DRAWN

X-X"

WALL ELEVATION

WALL ELEVATION LETTER

SHEET NO. WHERE DRAWN

X

X-X

WALL SECTION

WALL SECTION LETTER

SHEET NO. WHERE DRAWN

STEP FOOTING

REFERENCE ELEVATION

REFERENCE ELEVATION TO TOP/BOTTOM OF FOOTING

KEY PLAN NTS

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BLDG 2

BLDG 3

BLDG 4

BLDG 5

BLDG 6

BLDG 7

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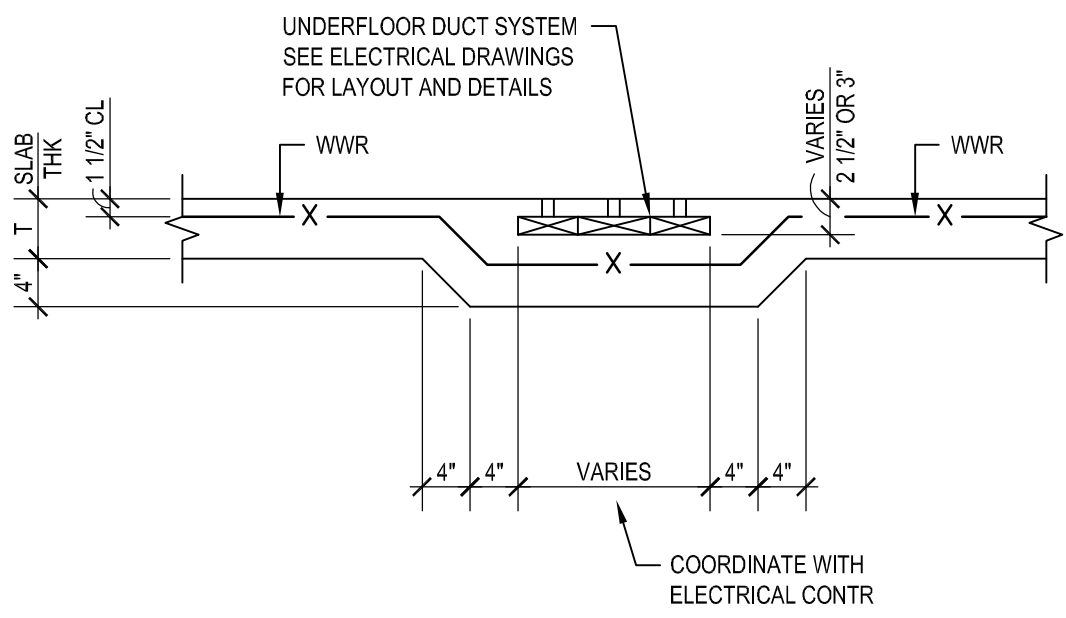
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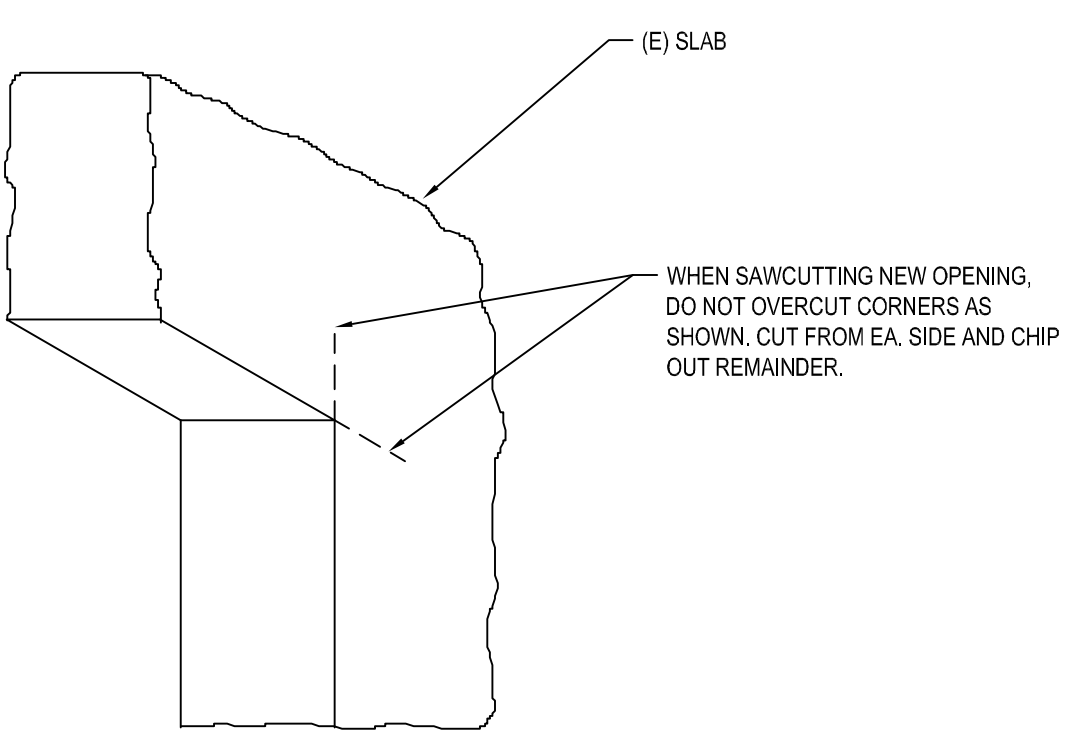
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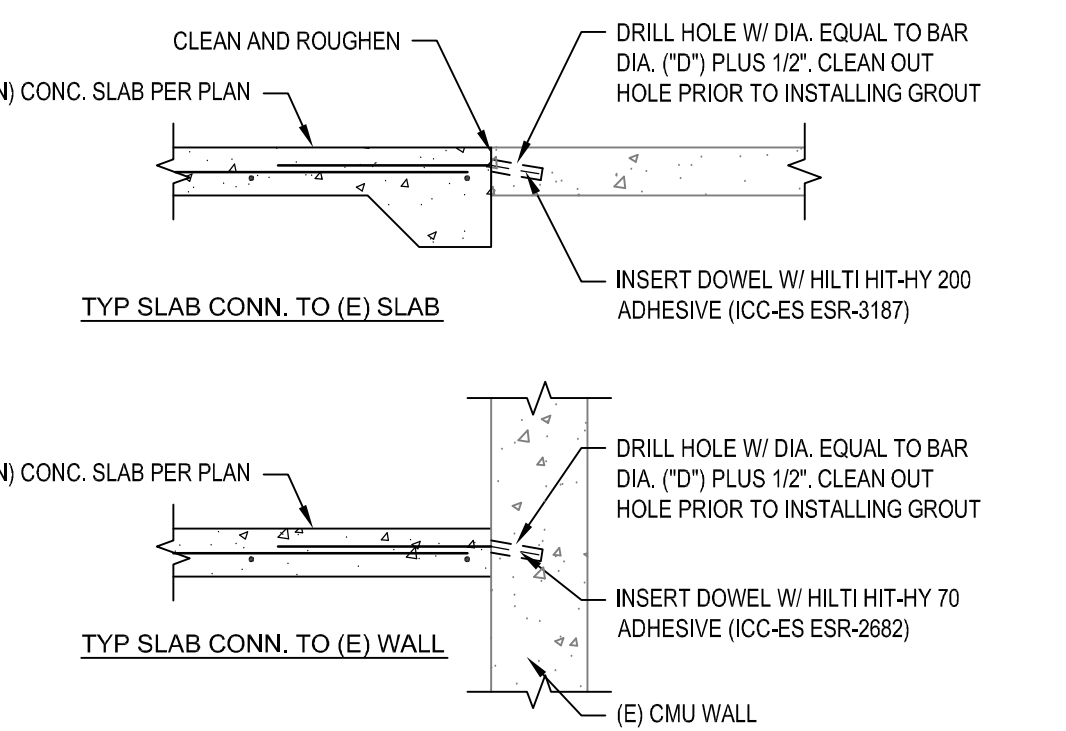
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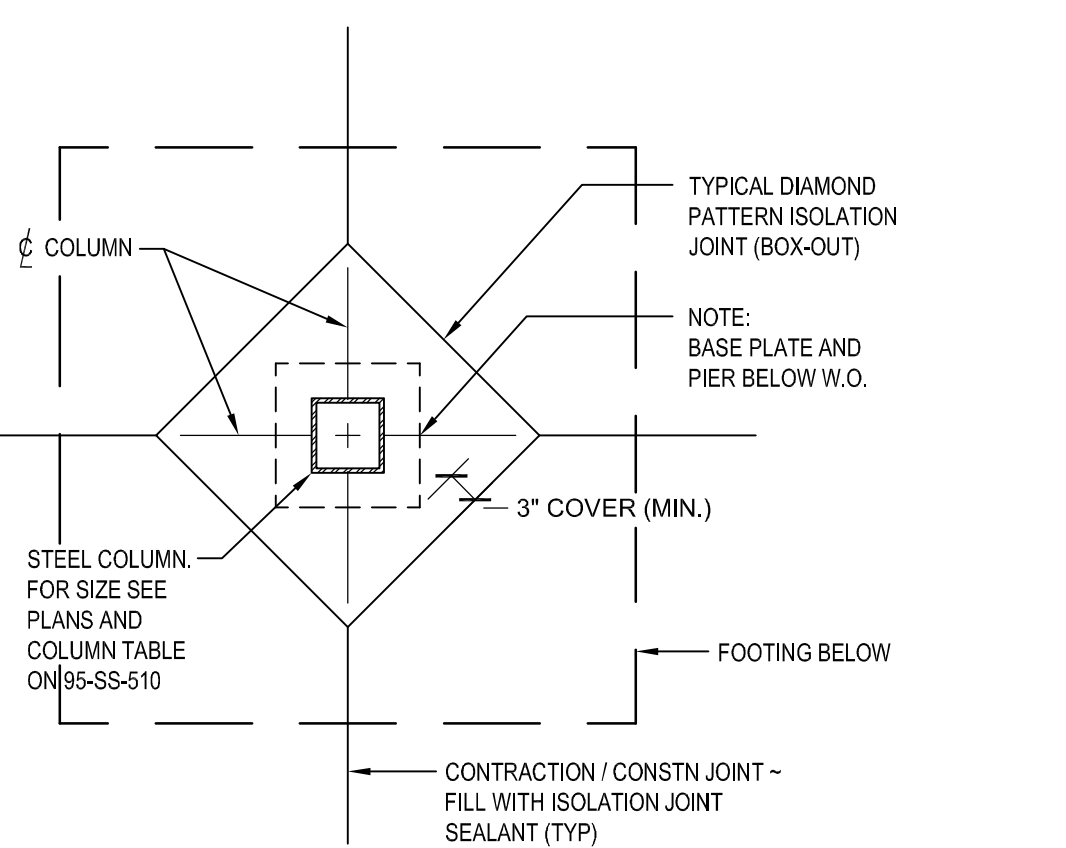
12 TYP ENCASED ELECTRICAL DUCT DETAIL
N.T.S.



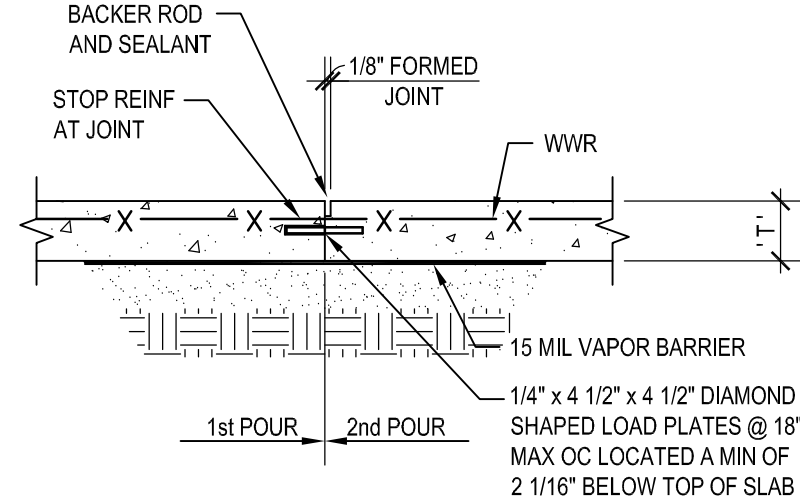
13 TYPICAL SAWCUT OPENING IN SLAB
N.T.S.



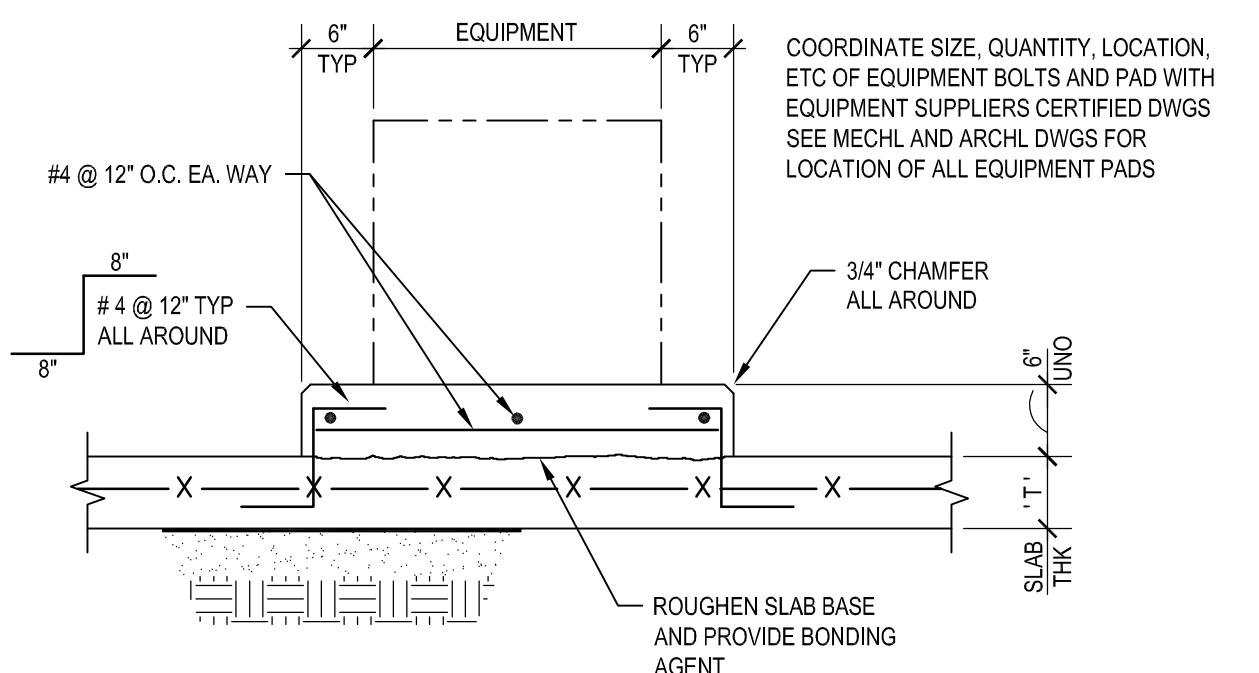
14 TYP. SLAB CONN TO (E) CONC. OR MAS.
N.T.S.



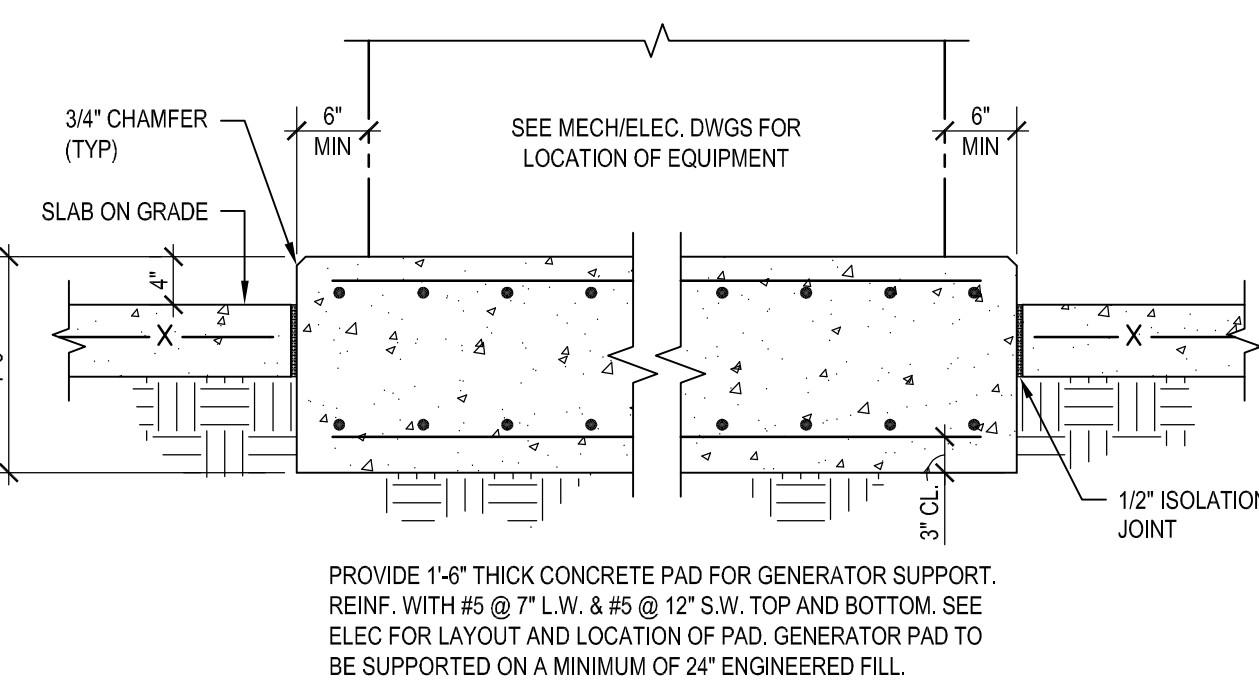
15 TYPICAL SLAB CONTRACTION JOINT AT COLUMNS
N.T.S.



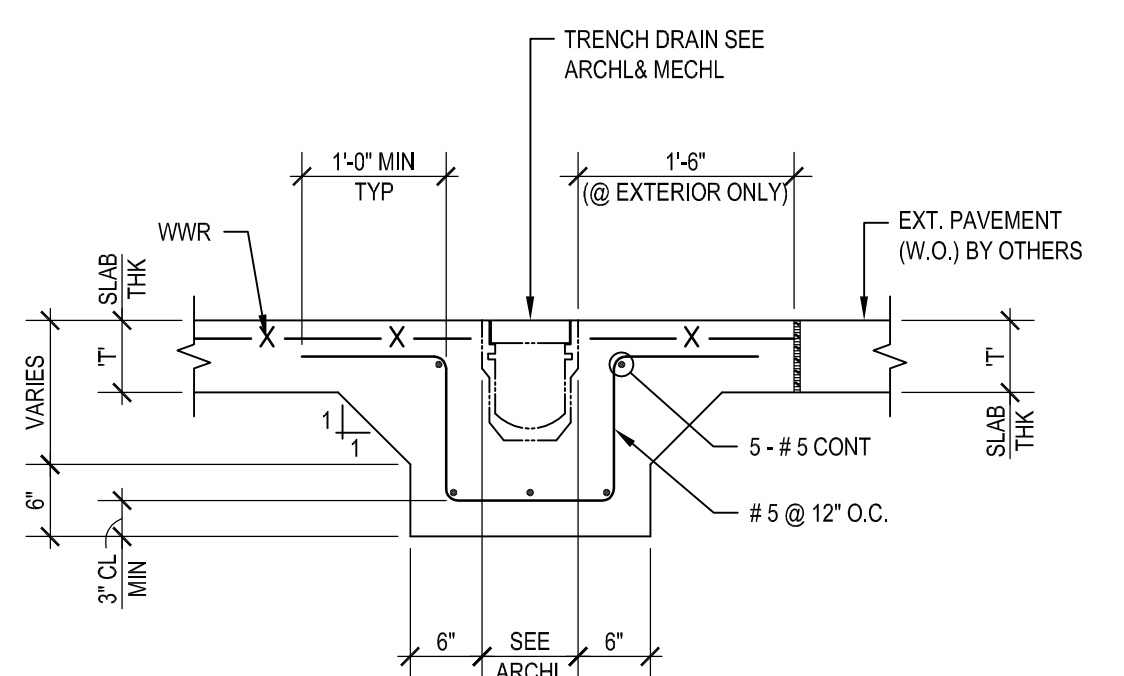
8 TYPICAL SLAB ON GRADE CONSTRUCTION JOINT DETAIL
N.T.S.



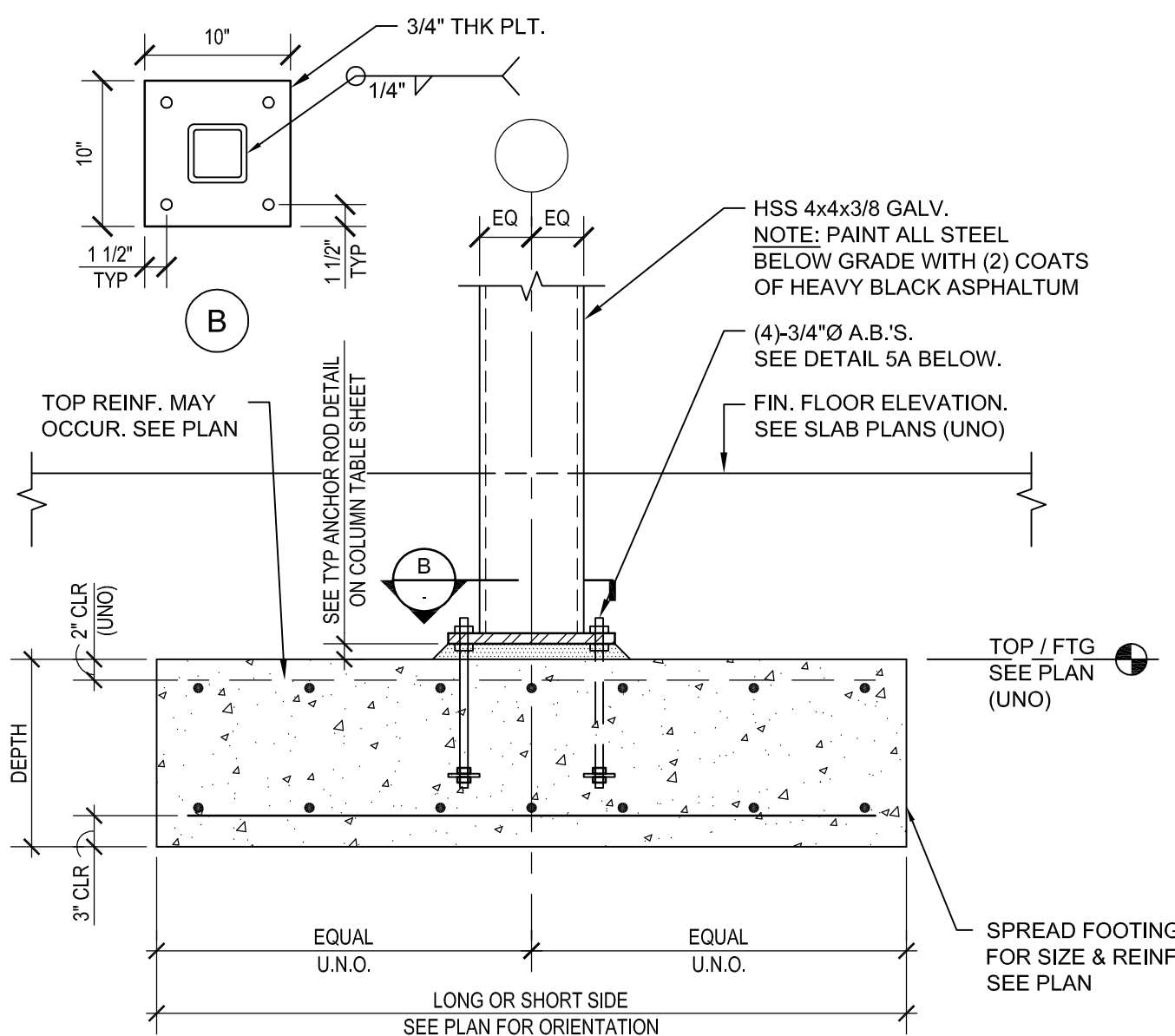
9 TYPICAL EQUIPMENT PAD DETAIL
N.T.S. (NON-VIBRATING EQUIP)



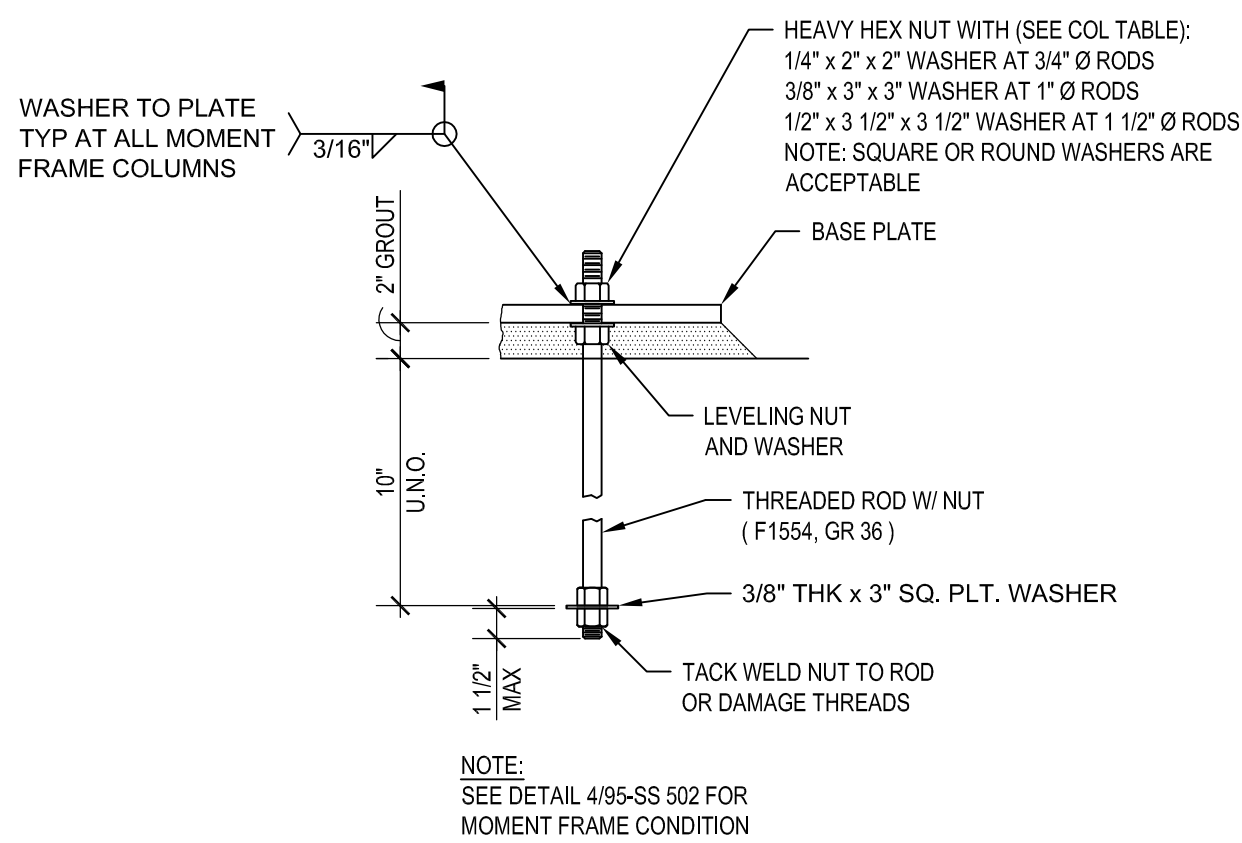
10 TYPICAL EQUIPMENT PAD DETAIL
N.T.S.



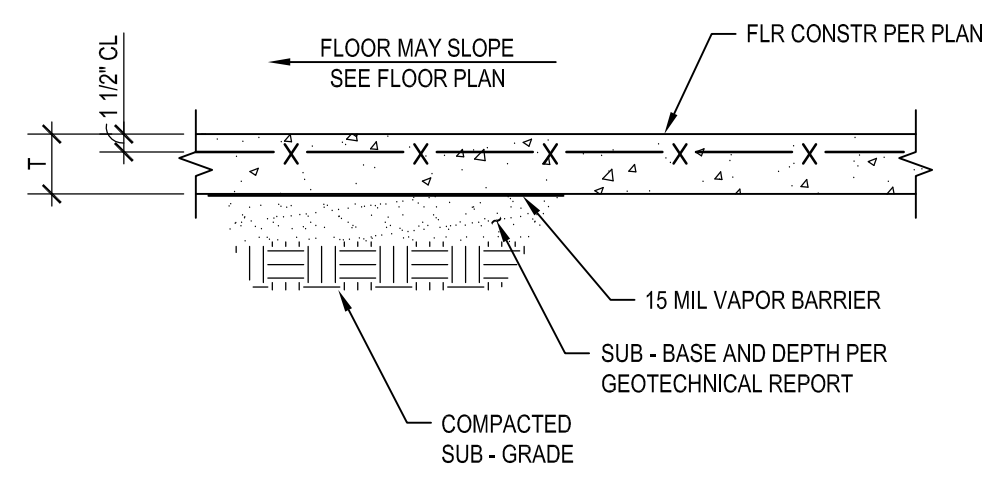
11 TYPICAL TRENCH DRAIN DETAIL
N.T.S.



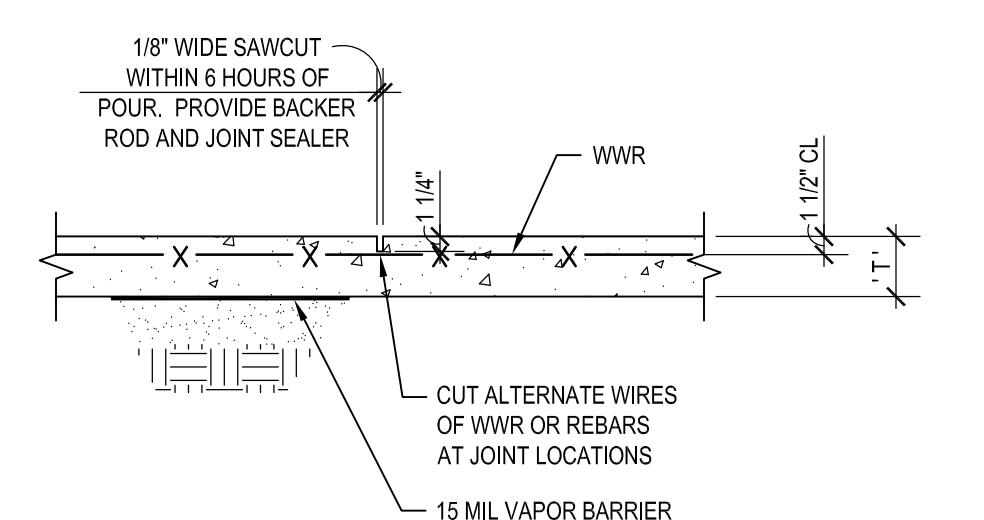
5 SPREAD FOOTING
N.T.S.



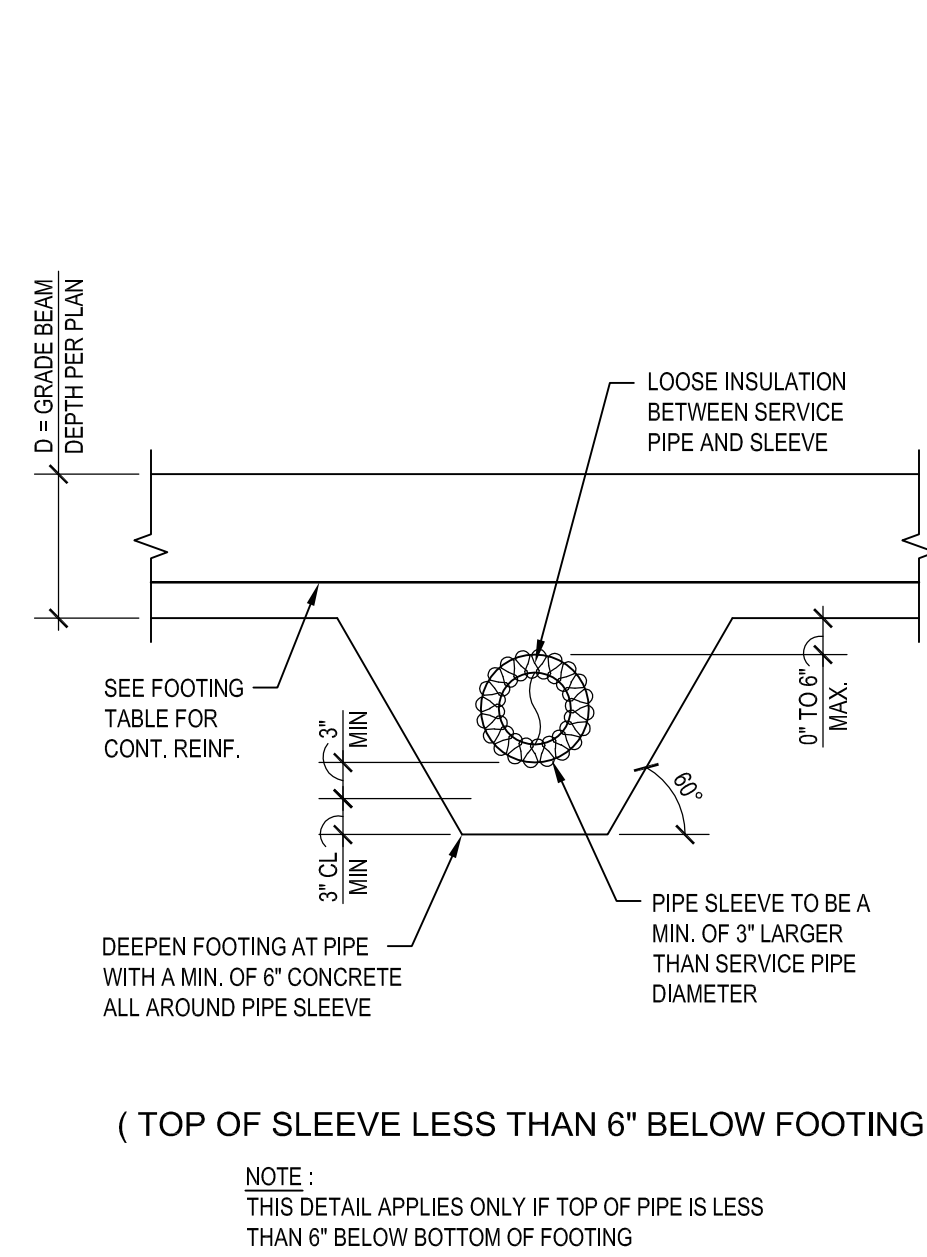
5A TYPICAL ANCHOR ROD DETAIL
N.T.S.



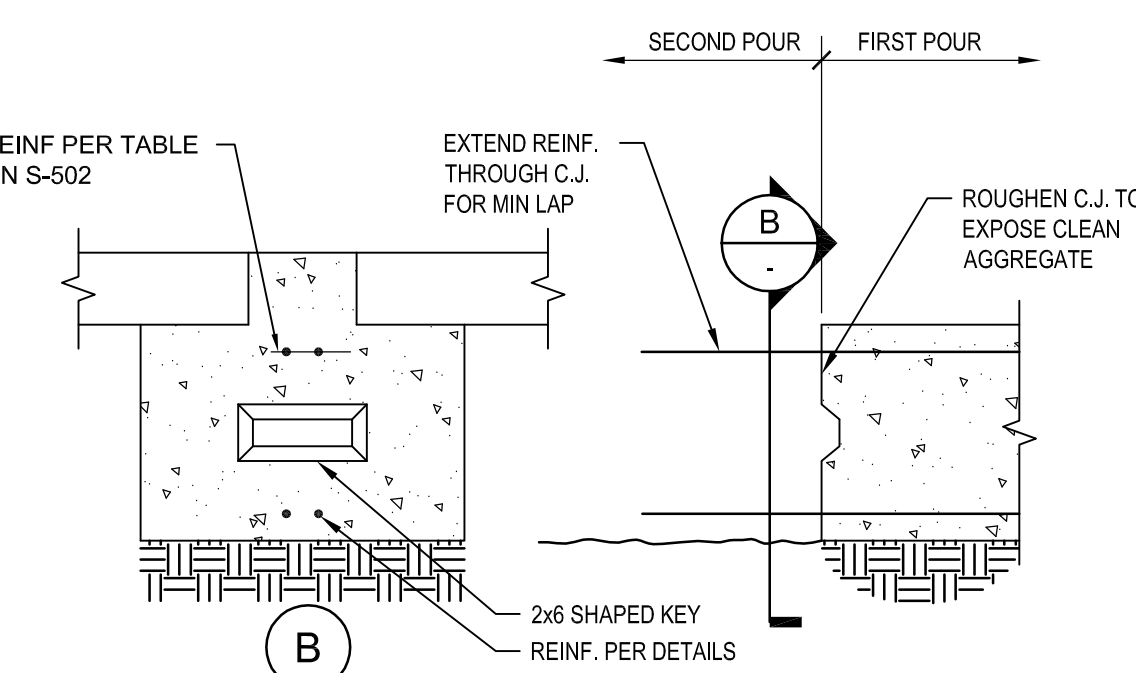
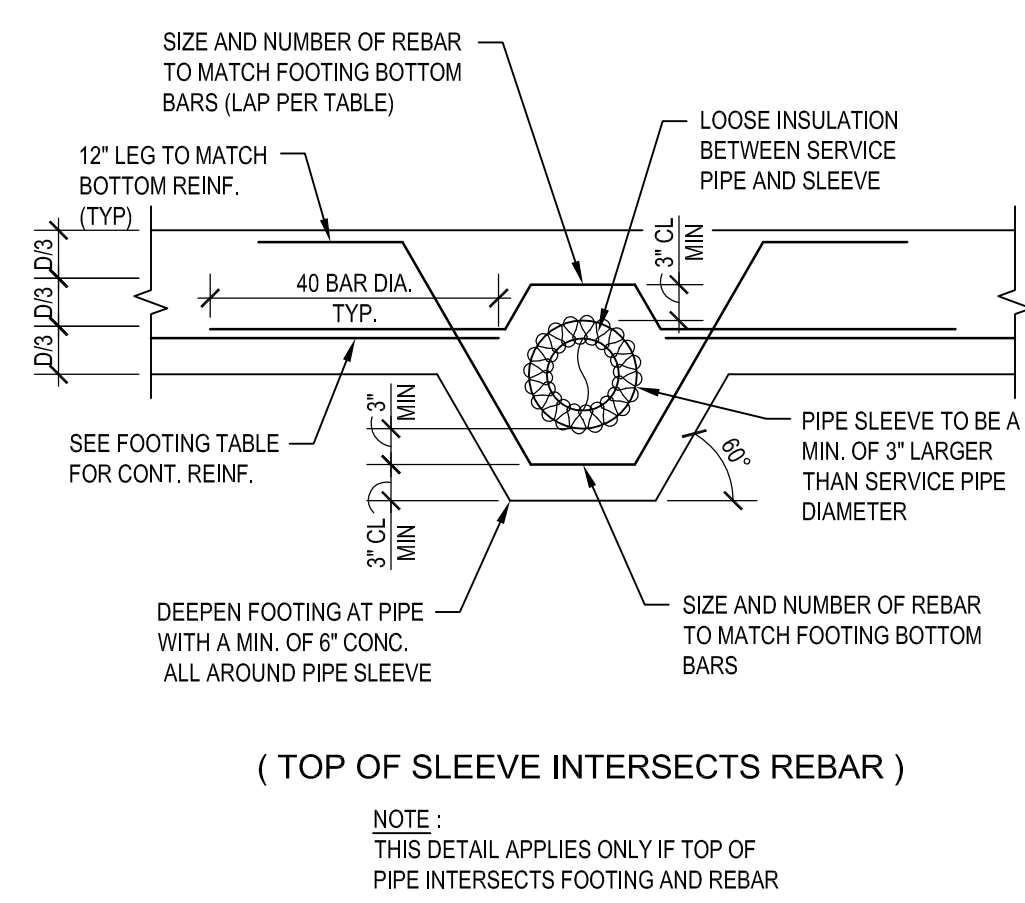
6 TYPICAL S.O.G. DETAIL
N.T.S.



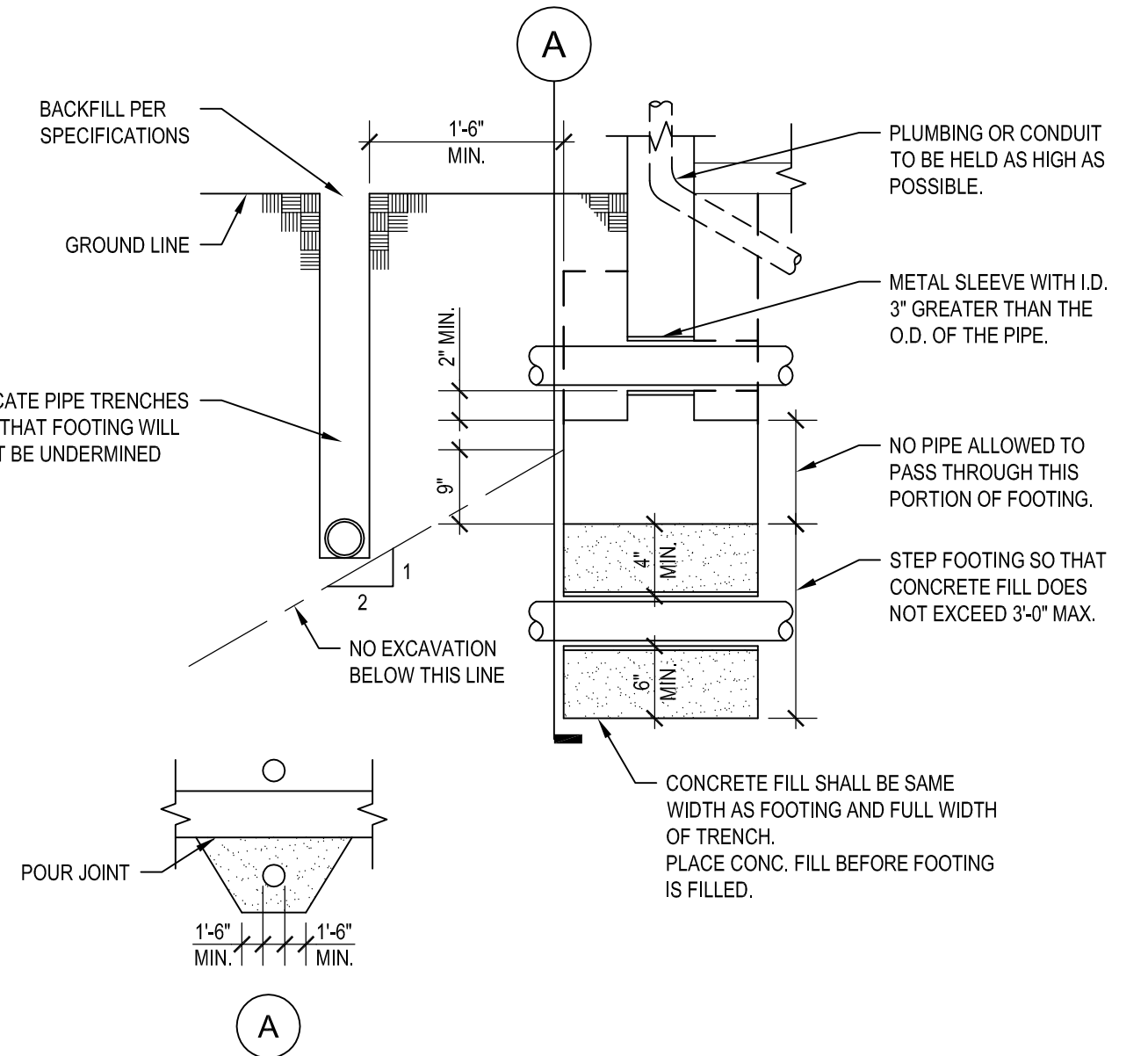
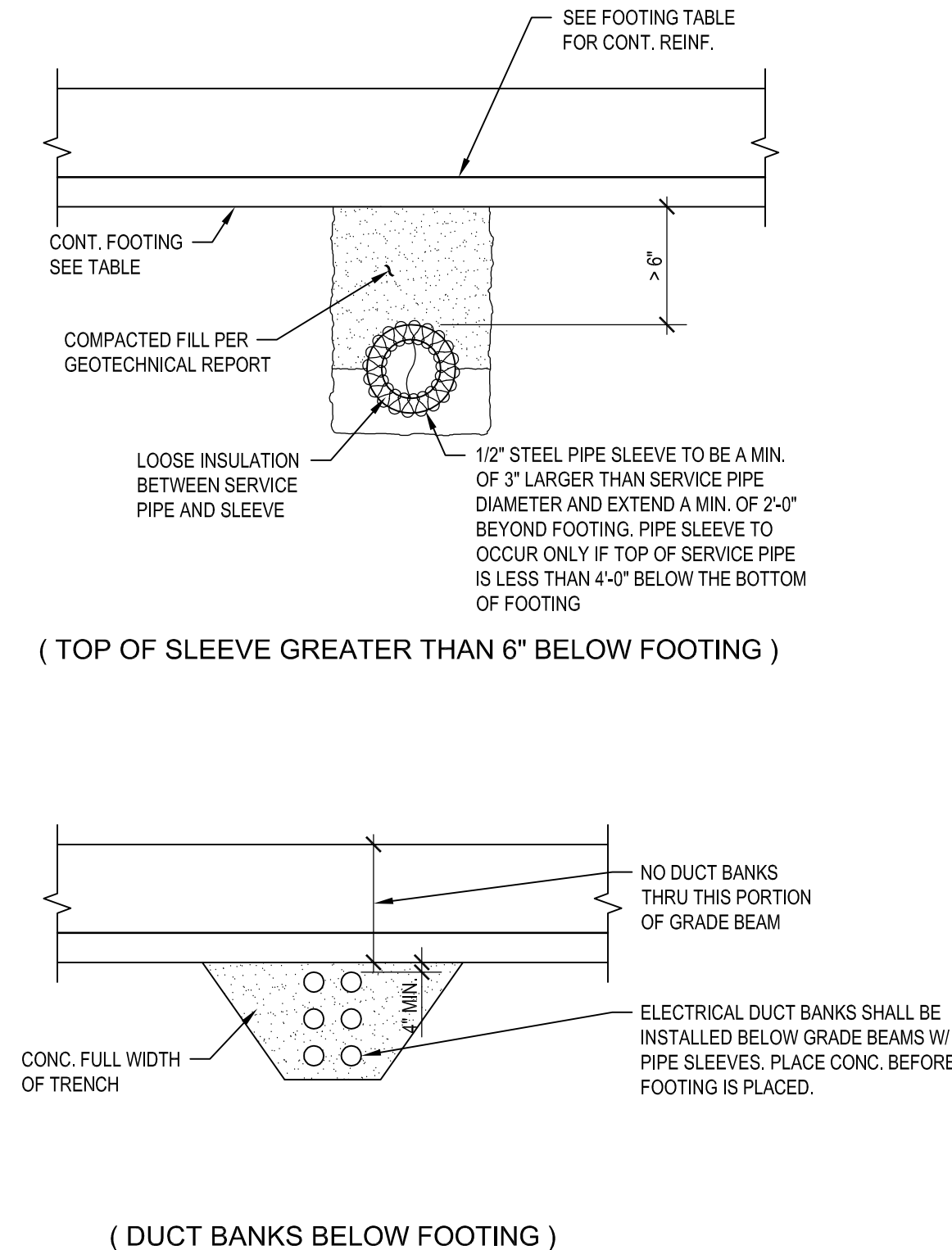
7 TYPICAL SLAB ON GRADE SAWCUT CONTRACTION JOINT DETAIL
N.T.S.



1 TYPICAL REINF @ WALL FTG CORNER
N.T.S.



2 TYPICAL FOOTING CONSTRUCTION JOINT DETAIL
N.T.S.

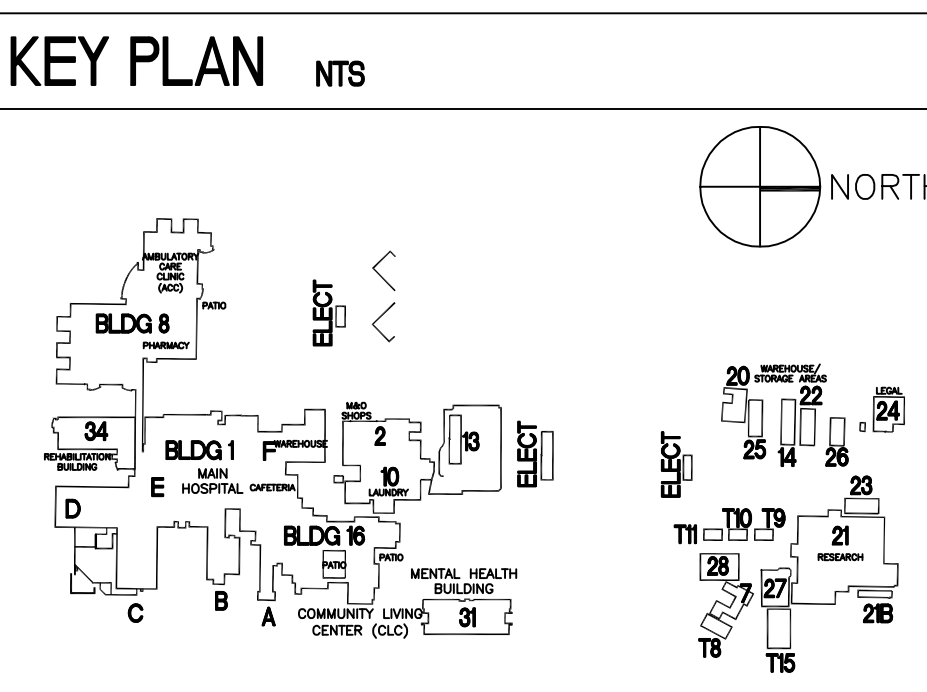


3 TYPICAL PIPE TRENCH AND FOOTING DETAIL
N.T.S.

- INSTALLATION NOTES**
1. SPLIT PIPE SLEEVE TO INSTALL AROUND EXISTING PIPE.
 2. STAINLESS STEEL BANDING TO BE USED TO SECURE SLEEVE.
 3. CARE SHALL BE TAKEN SO THAT SLEEVE REMAINS CENTERED AROUND PIPE DURING CONCRETE POUR.
 4. PRIOR TO INSTALLATION OF GRADE BEAMS, CONTRACTOR SHALL COORDINATE LOCATION OF ALL UNDERGROUND LINES WITH THE RELATED DISCIPLINES (STRUCTURAL, MECHANICAL, ETC.)
 5. IT IS THE CONTRACTORS ULTIMATE RESPONSIBILITY TO COORDINATE ALL UTILITY PENETRATIONS THRU FOOTINGS AND GRADE BEAMS PRIOR TO UTILITY PLACEMENT. CONTRACTOR SHALL COORDINATE THE RELATIONSHIPS OF THE FOOTING TO THE UTILITY LINE AND INCORPORATE STEP FOOTINGS, SLEEVES, & ADDITIONAL REINFORCEMENT AS REQUIRED.
 6. NO PIPE SLEEVES ALLOWED IN THE TOP 3RD REGION OF GRADE BEAM.
 7. PIPE SLEEVES THRU GRADE BEAM SHALL BE NO GREATER THAN 8\"/>

4 TYPICAL PIPE RELATIONSHIPS WITH CONCRETE FOOTING DETAILS
N.T.S.

- General Notes:**
1. BASE REFERENCE ELEVATION FROM FINISHED FIRST FLOOR EL. XX.XX' ± (+/- 0'-4")
 2. SEE SHEET 'S-001' & 'S-002' FOR GENERAL STRUCTURAL NOTES AND LEGEND.
 3. SEE SHEET 'S-001' FOR 'CAST IN PLACE CONCRETE' NOTES AND LAP SPLICE AND ANCHORAGE TABLE.



'BID SET'	
Project Title SITE ELECTRICAL DISTRIBUTION UPGRADE	Project Number 644-13-015 / 644-14-003
Location PHOENIX, AZ	Building Number 1, 8, 16, 21, 31
Date 03-06-2015	Drawing Number S-501
Checked WRL	Dwg. 19 of 49
Drawn WRL	
Office of Construction and Facilities Management Department of Veterans Affairs	



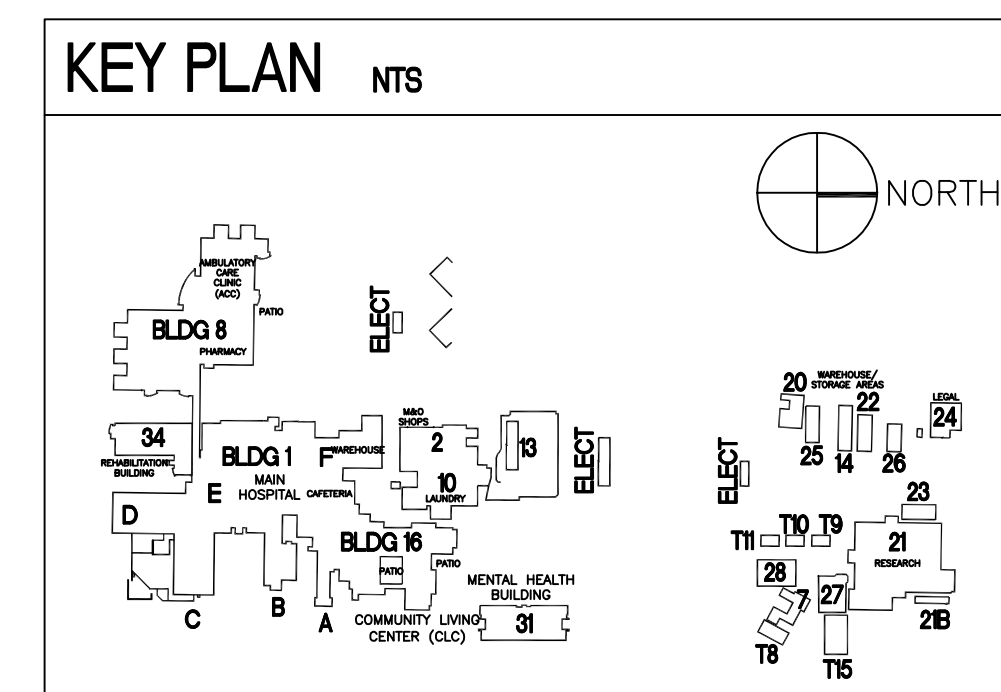
6 MASONRY WALL TABLE



1. BASE REFERENCE ELEVATION FROM FINISHED FIRST FLOOR EL. XX.XX' = (+/-0'-0")
2. SEE SHEET 'S-001' & 'S-002' FOR GENERAL STRUCTURAL NOTES AND LEGEND.
3. SEE SHEET 'S-001' FOR 'LAP SPLICE AND ANCHORAGE TABLES' AND SHEET 'S-002' FOR 'MASONRY NOTES'.



9 TYP MASONRY WALL SECTION
NTS

[illegible]